

JAN 5 1928

VOLUME XI

NUMBER 1

# MINNESOTA MEDICINE

*Journal of the Minnesota State Medical Association, Southern Minnesota Medical Association  
Northern Minnesota Medical Association and Minneapolis Surgical Society*

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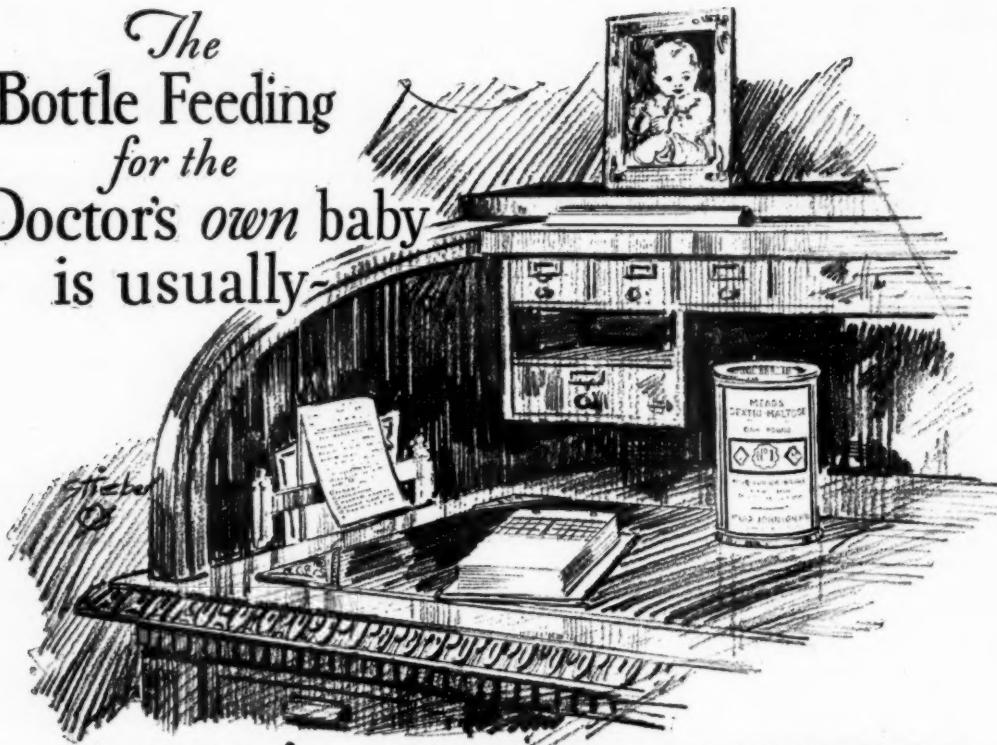
Entered at the Post Office in Saint Paul as second class mail matter.

Accepted for mailing at the special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized July 13, 1918.

Subscription Price \$3.00 yearly, Domestic  
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## VOLUME XI

JANUARY TO DECEMBER, 1928

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Minnesota State Medical Association

# MINNESOTA MEDICINE

*Journal of the Minnesota State Medical Association, Southern Minnesota Medical Association,  
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Vol. XI

JANUARY, 1928

No. 1

## THE REMINISCENCES OF A NEUROLOGIST\*

C. EUGENE RIGGS, A.M., M.D.

Prof. Emeritus, Nervous and Mental Diseases, University of Minnesota

*Saint Paul*

IT was through the kindly interest of Dr. Alexander J. Stone, one of the most brilliant and distinguished of the pioneer physicians of this state, that I located in St. Paul in 1881. I had just finished a senior internship in the Woman's Hospital in Baltimore, and hoped ultimately to specialize in gynecology. The "Three Sisters," however, ordered otherwise—a most fortunate decision for me.

Forty-six years ago, the medical curriculum was sadly deficient along neuropsychiatric lines; like surgery, it awaited its Lister. The neurologists and psychiatrists of that period were Dr. William A. Hammond, Dr. Edward C. Seguin and Dr. Alexander Hamilton McLane, who says in his "Recollections of an Alienist"—"For a long time I was one of the very few neurologists in the United States." There were only four in New York; two in Boston; the same number in Philadelphia and one in Chicago. The fourth, in New York, was the psychiatrist, Dr. John P. Gray, Superintendent of the State Hospital at Utica. He and Dr. McLane were experts in the Guiteau trial in 1881. Dr. Seguin was Clinical Professor of Diseases of the Mind and Nervous System in the College of Physicians and Surgeons. He was a remarkable clinician; in therapeutics his was a master mind; in this particular respect there have been no successors able to wear the mantle of Elijah. I would advise the young men present to read his "Opera Minora." I am sure they will derive from it what their elders have in the past. Dr. James Jackson Putnam was the pioneer Boston neurologist. To his initiative was due the Neurological Clinic of the Massachusetts General Hospital. He was the

first Professor of Neurology of the Harvard Medical School. There were three noted psychiatrists practicing in Boston at that time—Dr. Thomas Waterman, Dr. Clement Adams Walter and Dr. George F. Jelly. The latter was the first to conceive and advocate the line of endeavor that has materialized in our present psychopathic hospital. In addition to Dr. Weir Mitchell in Philadelphia, there was Jeremiah Thomas Eskridge, who was a post-graduate instructor, in 1883, in Mental and Nervous Diseases in Jefferson Medical College. In 1871, Dr. James Stewart Jewel began the practice of mental and nervous diseases in Chicago. In 1874 he established the "Quarterly Journal of Nervous and Mental Diseases." It survived many vicissitudes and now appears monthly as "The Journal of Nervous and Mental Disease," ably edited by Dr. Smith Ely Jelliffe.

The three outstanding neurologists of this country were William A. Hammond, S. Weir Mitchell and Edward C. Seguin.

On arriving at St. Paul, I found actively functioning a Medical School—"The St. Paul Medical College." It was an expression of the pioneer spirit of the day, aflame with scientific ardor, untiring and unselfish. Its faculty comprised representative medical men of both cities. Humble in its beginning, situated over a saloon on West Third Street, yet after a period of evolutionary travail, it ultimately became the Medical School of the University of Minnesota, today the only medical school in Minnesota, a state with a population of 2,563,550. Of the twenty-seven charter members of the faculty, eight are still living—Drs. Beard, Fulton, Bracken, Greene, Bell, Jones, Dunsmoor and myself. As I found the Professor of Materia Medica

\*Read before the Central Neuropsychiatric Association, St. Paul, Minn., Oct. 7, 1927.

and Therapeutics, Dr. James Davenport, seriously ill, I was asked to complete his course, and as this opportunity appealed to me, I gladly accepted. I burned the midnight oil. Very distinctly I remember my first lecture. There were no S. O. S.'s in those days but one was sadly needed. My embarrassment was great, but the amusement of the students was far greater. In the following year, the faculty added Mental and Nervous Diseases to the curriculum. So little was known about nervous and mental diseases at this time that there were no applicants for the position, and it was given to me.

"So nigh is grandeur to our dust,  
When youth replies, 'I can.'"

Thus began for me life's great adventure. My qualifications were meagre; very little attention was given to neuropsychiatry at that time. Of the cytology of the nerve cell we knew nothing and of the architecture of the nervous system we knew less. Psychiatry was also in its swaddling clothes. It has been my rare good fortune to trace and observe the development of our specialty from these small beginnings to its present noon-day splendor.

"We build our future thought by thought,  
By word or deed and know it not."

I was received by my confrères, the pioneer medical men of this state, most graciously, but graciousness does not pay office rent, and to them nervous, and especially mental, diseases, like *x*, indicated an unknown quantity in which they had little or no interest. In 1888, the Board of Regents of the University of Minnesota established the Medical Department of the University of Minnesota. Nervous and Mental Diseases were given a Chair equal in rank and prerogatives with those of Medicine, Surgery and Obstetrics, with the exception that its vote in Faculty matters was properly proportioned to the Major Chairs. Medical Electricity was included in this department. At this time it was regarded as possessing a real importance. Electro-physics, as a basis of an intelligent electro-therapy, was conscientiously taught. For twenty-five years it was my great privilege to be the head of this Chair.

One of the greatest pleasures of life's Autumn is to meet my boys, as I love to call them, who are distributed all over the Northwest, and reminisce. Their kindness more than compensates for a quarter of a century of gratuitous service.

There were few medical schools at this time where psychiatry was made obligatory. Sir Thomas Clouston says in 1896, "The Study of mental diseases is now entering on a new era; it has for the first time become obligatory." The personnel of the student body thirty-nine years ago was very different from that of today. "The medics," says Dr. Beard, "were hard-working, ambitious, critical as ever—a rough lot. To pass up a student over the amphitheatre benches was a common pastime \* \* \* ; to conceal animals, large or small, dead or alive, in the reading desk or under the seats, to mix chemical solutions so the reactions would not work, to introduce a stiff into a faculty meeting were quite ordinary pranks." Richard Olding Beard was one of the men indispensable to the Medical Faculty. His life has been devoted to the Medical School. The University of Minnesota has never had a more faithful servitor. Dr. Beard has the rare gift of brilliant writing. He has written "each one of the memorials of the men of the Faculty who have died, from the beginning of the school to the present time," the last one being that of Dr. A. W. Abbott. President Northrop said to him while walking across the campus one day, "Beard, when I die, I hope you will write my memorial, if I may be considered to deserve one." When Dr. Northrop died, he was invited to do this as the representative of the entire faculty.

There was a feeling almost amounting to an aversion on the part of the students regarding neurology and psychiatry. In the light of today, the explanation of this feeling is perfectly clear, especially as far as neurology is concerned. It required the researches of Golgi, Cajal, Ferrier, Brevor, Fritsch and Hitzig, Edinger, Hughlings Jackson, Charcot, Horsley and a host of other brilliant workers to illumine and basically ground our specialty and make it the most alluring and attractive of all branches of Medicine. It was the boast of Augustus that he found Rome built of brick and that he left it built of marble. It was the staining methods introduced by Gerlach, Weigert, Marchi and many others, supplemented by the remarkable work of Golgi and Cajal, that made possible a more detailed study of the minute architecture of the nerve cells and their processes. These distinguished investigators and their predecessors found only brick, but left a stately edifice of marble.



**The first faculty of the University of Minnesota Medical School.**

First row: James H. Dunn, Perry H. Millard, Cyrus Northrop, C. Eugene Riggs, E. J. Abbott.  
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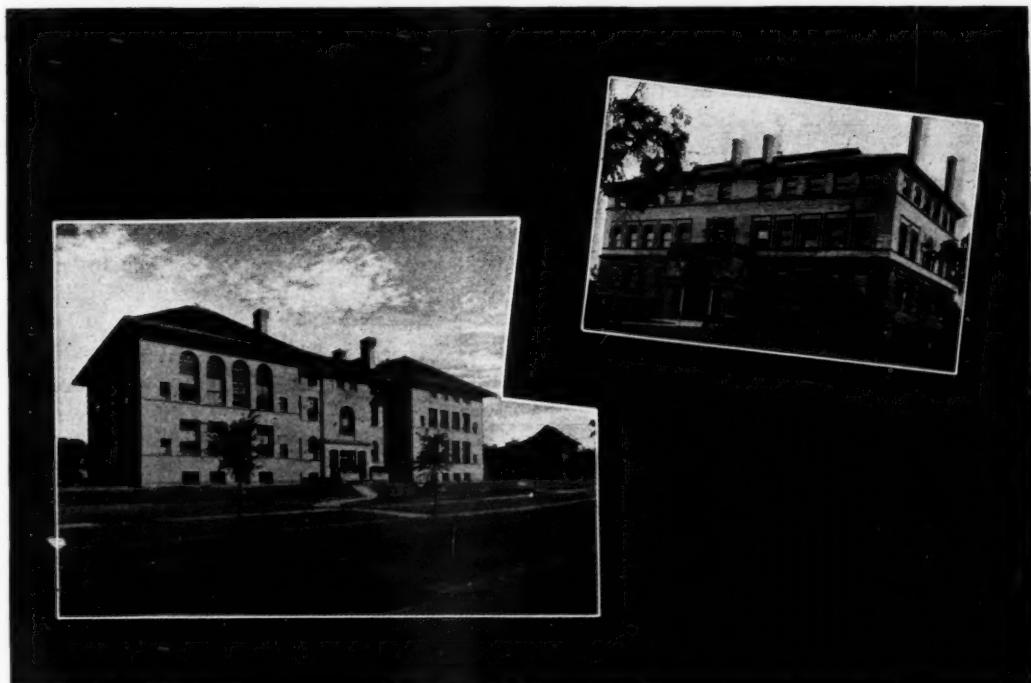
During a post-graduate course in the laboratory of the late Alexander Bruce (Edinburgh), I acquainted myself with the technic of the various methods. I especially familiarized myself with the remarkable work of Golgi and Cajal. I obtained exquisite lantern slides which illustrated the various modes of procedure. On my return home, I gave the Senior Medical class a course of lectures, with the stereopticon, acquainting them with the minute anatomy of the nervous system. Golgi died in 1926, in his eighty-third year. His great contribution to which the world is indebted is "a method which gave a deeper insight into the architecture of the central nervous system." Cajal bears his seventy-odd years lightly; his scientific ardor is undiminished, although his capacity for sustained effort has materially lessened. I brought home with me a microtome, an invention of Dr. Bruce, and established a neuropathological laboratory in the St. Paul Medical College—then used for clinical lectures and a free dispensary. This was the first laboratory of neuropathology in Minnesota. For a time I was fortunate in having Dr. Louis B. Wilson in charge. He made a study of the spinal cord of a patient of mine that died of pernicious anemia. I reported this case and the neuropathological findings before the American Neurological Association at Philadelphia in 1896. Putnam made the first contribution in this country to this subject in 1891. Three months later, Dana reported a case. In 1899 he reported still another. My case is the third in American literature.

It was with great trepidation of soul that I gave my first course of lectures on neuropsychiatry in 1882. Dr. William A. Hammond's Diseases of the Nervous System was the outstanding textbook at the time. It passed through eight editions. Hammond was a keen clinical observer, a fascinating lecturer and possessed a brilliant mind. That he did not suffer from an inferiority complex, the following quotation from the preface shows: "Fifteen years the Treatise has been before the Profession; it has continued to receive approval at home and abroad to an extent beyond that ever given to any work of like scope and objects, published in any part of the world." His most noted confrère was S. Weir Mitchell. The rest cure gave Dr. Mitchell a world-wide fame. I regard it as the least of the distinguished service he rendered neurology.

Frankly, I believe it has done more harm than good. This form of therapy is indicated in only a minority of cases. It must be given by one who knows his psychology, for if he fails to perceive the motive or drive lying subconsciously or consciously in the mind of the patient, which is the crux of the trouble, disintegration, not integration, occurs in the personality. As commonly given, the rest cure furnishes a fertile soil for the development of latent schizophrenic tendencies. Both Dr. Hammond and Dr. Mitchell, changing slightly the title of one of Joseph Collins' books, looked at literature, and to Dr. Mitchell there came enduring fame. I heard him in his early eighties read a paper before the American Neurological Association. He never made a finer contribution—clear, terse and illuminating.

When we compare the viewpoint of nervous and mental diseases forty-six years ago with that which obtains today, our credulity is taxed to the utmost. Perversion of function in nervous troubles—the so-called neuroses—were accepted by all. Chorea, we now know, is an encephalitis due probably to the diplococcus rheumaticus, which has been found in the pia mater of fatal cases. We no longer speak of epilepsy but of the epilepsies. We do not now regard essential epilepsy as a "disruptive cortical discharge" but we believe that this, together with the symptomatic forms, constitutes purely a syndrome, arising from a great variety of causes. Is epilepsy declining? A census taken by the National Committee for Mental Hygiene, January 1, 1920, exclusive of the epileptics among the insane, showed that there were 14,937 epileptics under institutional care in the United States. A census of the Federal Bureau, January 1, 1923, disclosed 12,936, a reduction in number of 2,001, as compared with the previous census. A census of the epileptics in the state hospitals in 1904, as compared with the census of 1923, showed a decrease of 1,636. "It seems," says Horatio M. Pollock and Edith M. Furbush, "that a decline in the number of epileptics in the community has also taken place." The reason for this decrease is as yet a matter of pure conjecture.

Thirty years ago, Byrom Bramwell stated that poliomyelitis anterior acuta was probably due to some toxic irritant in the blood and that future observations would most likely demonstrate the



Laboratory of Medical Sciences,

Medical Hall.

University of Minnesota Medical Department, about 1900.

presence of a micro-organism or the products of a micro-organism as the infective agent, and that poliomyelitis was neither infectious nor contagious. The micro-organism has not been isolated; it is believed to be a filter-passenger. Not until after the Vermont epidemic in 1894 did it occur to me that it ever manifested itself in any other than the sporadic form.

It is estimated that one-fourth of the survivors of an epidemic recover. The remainder, to a greater or lesser degree, are the victims of a life-long disability. For about 100 years we have known of infantile paralysis. The contribution of this generation to the knowledge of this disease has been:

- (a) That it is infectious, with a special affinity for the central nervous system, particularly for the anterior horns of the spinal cord.
- (b) That while there are no definite aids to assist in diagnosis, yet the examination of the spinal fluid possesses a diagnostic importance.
- (c) In the acute phase, the treatment is purely empirical, as it has been for the past forty years. Therapy can be summed up in one word

—rest. Weak muscles must be protected, affected limbs immobilized; especially is this true of the head and the spine. Rest, general and special, must be individual and necessarily indefinite. Years ago, therapy began six weeks after the beginning of the acute attack; in the light of today, this was cruel, brutal and harmful.

I recall "a symposium on spinal concussion" that was read before the Minnesota State Medical Association, thirty-five years ago, which was the outstanding feature of that session. Drs. W. A. Jones, Arthur Sweeney, the late H. A. Tomlinson, Leo Crafts, R. O. Beard and myself, the Chairman, discussed different phases of this subject. It is an interesting fact that hysterical stigmata, notably anesthesias, hyperesthesia, amaurosis, usually unilateral, etc., have of late years, like the types peculiar to the Salpêtrière of Charcot's day, been exceedingly rare. Could the feminism of today, with the larger opportunities, both physical and mental, explain their disappearance, as well as the apparent increase in so many other morbid nervous and psychical conditions? (Flemming.)

For the medical expert these were the days of the cave man. The lawyer knew his nervous anatomy better, as a rule, than the expert. It was the duty of his associated experts to see that he did. I remember a distinguished St. Paul surgeon, as he was leaving the witness stand in a celebrated case in which Dr. Sweeney and I were interested, remarking, "That is hell." Dr. Perry Milliard, to whom Minnesota Medicine owes a debt of eternal gratitude, during the discussion following, quoted Judge Story as saying, "There were three kinds of medical experts, who should be classified respectively as liars, blanked liars and medical experts." Dr. Jones, speaking of Erichsen in his paper, suggested that the advice of Gapin of Omaha be followed—that the so-called disease be dedicated to him so that he might bear the obloquy of it. Erichsen, Page and Clevenger regnant for a day—then kind oblivion. The individual papers composing this symposium, as I read them after the lapse of thirty-five years, I found to possess real merit. They reminded me, however, of a saying of Josh Billings, that "It is better to be ignorant than to know so many things that are not so." We look back, laugh and sigh, our eyes grow misty—the good old days!

During the last days of May and the first of June, there was celebrated at the Salpêtrière, the centenary of the death of Pinel, who immortalized his name by breaking the shackles of the insane and delivering them from close confinement in prisons and opening to them special hospitals. Several Swiss physicians, inspired by his humanitarian ideas, introduced similar reforms in Swiss asylums. Köigsfelden inaugurated treatment by labor in 1810. Twenty-five years elapsed after this dramatic gesture by Pinel before his good example began to bear fruit.

For many years it has been my privilege to know the representative asylum superintendents of this country. They are a splendid set of men—possessing the rare qualities of insight and foresight. Prior to the State Board of Control, I was Chairman for ten years of the Minnesota State Lunacy Commission. Governor Merriam authorized me to visit the asylums of Europe and I visited those of England, Scotland, Ireland and France. I asked a superintendent in Ireland to give me a bird's-eye view of his hospital; he asked me to come with him; he took me to the

top of a high hill overlooking his institution. "This," he said, "is a bird's-eye view." At any rate, it was all I saw of his asylum. The two outstanding psychiatrists that I met during my investigations were Sir George Savage and Sir Thomas Clouston—two men who have more profoundly influenced my psychiatric studies than any other alienists that I have ever met. As chairman of the committee on the history of the treatment of the insane, of the twentieth annual meeting of the National Conference of Charities and Correction, which met in Chicago in 1893, I gave a report on "The care and handling of the insane in the last twenty years." In this report I stated that "the State Boards of Lunacy Commissions, Associations of Superintendents—all—while at times accused of over-conservatism and at others of over-daring, have worked toward the light as seen by them." The Krapælinian classification was a great boon to psychiatry, but it has served its day, and newer and truer conceptions of insanity now prevail. In May, 1893, I made a plea, before the North Dakota Medical Society, for the voluntary commitment of the insane. Later, I presented papers calling attention to the necessity for an asylum for the criminal insane and detention hospitals for the acutely insane. If an attack developed suddenly, without money or friends, these were placed in the common jail until commitment could be made—an act of barbarism. After years of propaganda, by my confrères and myself, I had the satisfaction of seeing these reforms, first proposed by me, enacted in law. The voluntary commitment law was passed in 1909. Detention hospitals were also established in Duluth, Minneapolis and St. Paul, in 1909, where patients could be kept under observation until a diagnosis could be made. A department for the criminal insane was created at the State Hospital at St. Peter in 1907.

While Chairman of the State Lunacy Commission, I found I could obtain the services of Dr. Ford Robertson, a brilliant neuropathologist, who later had under his charge all the neuropathology of the Scottish asylums. He also gave courses on the subject to the staffs of the different asylums of Scotland, for an insignificant salary. The Commission recommended that he be invited to take in charge the neuropathological work for the Minnesota asylums, instructing their various medical staffs and correlating their

work, his laboratory being located at the University—a wonderful opportunity—but vision was lacking to see its great potentialities. Later he wrote a textbook on insanity and became a recognized authority.

For twenty-one years I practiced neurology, believing that *tabes dorsalis* was "a sclerosis of the posterior root zones of the spinal cord, which Dr. W. A. Hammond described as one of the most thoroughly understood diseases in the whole range of medical science." Paresis was attributed to excessive venery and alcoholic excess. In 1903, Metchnikoff injected apes with syphilis and demonstrated that it was an infectious disease. This was the first of a series of notable discoveries. Schaudin, in 1905, discovered the *spirocheta pallida*, and in 1906 Ehrlich gave arsphenamin, a priceless gift, to the world. As a sequel to this remarkable epoch, Noguchi, in 1912, observed spirochetes in the brains of forty-eight paretics and in the spinal cord of one tabetic. From this time, neurosyphilis had a definite pathology and a scientific therapy.

It was my privilege to introduce and use the Swift-Ellis method in Minnesota. The patient was a paretic in whom there occurred a temporary remission. Unfortunately, shortly after this, their occurred the Los Angeles tragedy, which caused a merciless criticism of this procedure. In the thousands of cases in which I have used the Swift-Ellis treatment, there have occurred no untoward results. Arsphenamin, bismuth, mercury and iodide, experience shows, are the most useful agents in meningeal and vascular syphilis. In parenchymatous lues, tryparsamide and malaria are conceded to be the most beneficial treatment. Arsenic\* as a therapeutic agent has undergone many vicissitudes since the days of Hippocrates; La Spara sold it to the young matrons of Rome as a cure for their matrimonial difficulties. Naturally it fell into disgrace when its use as a secret poison became widespread. However, it survived these abuses. In my neurological work I have found it a drug of surpassing worth. Its value in chorea was impressed upon me by Dr. W. A. Hammond and Dr. Edwin C. Seguin. In very severe cases, Hammond used it in glycerine, hypodermically. I always pressed it to the physiological limit; in only one instance did there occur an arsenical neuritis.

In pernicious anemia, in which I have used it for years, Gulland recently stated: "In this disease, arsenic is still our standby." In the therapy of syphilis, it is our most valuable drug. Its intravenous use in disseminated sclerosis is frequently followed by a remission. As a nervous tonic it has no equal.

In my early professional life, paresis was regarded as an insanity, usually manifesting itself in three types, *i.e.*, the grandiose, the melancholic and the demented, the grandiose form occurring most frequently. Noguchi demonstrated that it was not a psychosis but a spirochetosis of the brain, whose symptoms may run the whole gamut of mental disease. As I recall the bitter struggle that has raged regarding the therapy of neurosyphilis, there occur to me the lines:

"How few think justly, of the thinking few  
How many never think, who think they do."

Molière described the medical world of his day as an emulsion of charlatanry and science, and when we recall some of the manifestations of its credulity during my lifetime, we can appreciate his satiric epigram.

In the early eighties, long before our modern concepts of the internal secretions, a wave of oophorectomy swept over this country. Removal of the ovaries was believed to be a panacea for neurasthenia, epilepsy, hysteria and nervousness generally. It was a "slaughter of the innocents" leaving incredible suffering in its wake. The lacerated cervix, the movable kidney and the displaced uterus in the days that are bygone were believed to be a veritable Pandora box, out of which sprang all forms of nervous disorders. Are these less frequent or is it no longer fashionable to talk about them? Will not this be the case with blood pressure in the years that are to come?

One of the most inexcusable fads forty years ago was the suspension treatment for nervous disease. It was suggested by Motchoutkowski and popularized by Charcot. While I treated many cases by suspension, it always seemed to me to be irrational and unscientific. The following incident of the pioneer days, with no neurological bearing, is worthy of record. Dr. Alex. J. Stone was the first in St. Paul, and I believe in the State, to introduce the use of chloroform in obstetrics. This innovation was bitterly opposed, because, said his critics, "It was contrary to Holy Writ—did not God say to the woman

\*Editorial British Medical Journal, Oct. 15, 1927.

'I will greatly multiply thy sorrow and thy conception—in sorrow thou shalt bring forth children.'" Unfortunately, in the administration of this priceless boon to one of his puerperal clientele, in whom there had developed grave complications, the patient died. The chloroform, Dr. Stone thought, had nothing to do with her death. The storm of abuse and merciless criticism that swept over him was truly cyclonic, but Dr. Stone was no weakling; he was one of the great men of his day. This untoward experience seemed to increase rather than diminish his popularity. "He who would write an heroic poem," says Milton, "must make his whole life an heroic poem." Medically speaking, his life was an heroic poem. His sun reached its zenith undimmed—it set in a cloudless splendor.

The passing of the good old days none can deplore, because with the increase of knowledge not only have certain diseases disappeared but a majority of the others have been modified almost to the point of being benign. "Senility" says Flemming, "while not a disease, may be added to the list of disappearing diseases. There is much evidence that its onset is postponed by several years." However, "the only thing," says Sir Arthur Keith, "that scientists will probably never conquer is old age."

Eighteen years ago last January, I invited the neurologists of the Twin Cities to be my guests at the Minnesota Club. That evening there was organized the Minnesota Neurological Society. There were present Drs. W. A. Jones, R. O. Beard, Leo Crafts, A. W. Dunning, J. B. Johnstone, Charles R. Ball, H. W. Jones, A. S. Hamilton and myself. It was voted that those present, with the addition of Drs. Arthur Sweeney and Haldor Snee, who were unable to attend, be made the charter members of the Society. I was elected president; Dr. Leo Crafts, vice-president; Dr. W. A. Jones and Charles R. Ball were made members of the Council. During the second term of my presidency, Dr. Archibald Church gave the Society a notable address. The Minnesota Neurological Society has been a growing concern; it has greatly stimulated things neurological and has developed a delightful camaraderie among its membership. Among our most valuable members and enthusiastic workers are the neurologists of the Mayo Clinic. These gentlemen and their neurological surgeon, Dr. Adson, give the Society a clinic every spring—a

clinic unsurpassed; then entertain us royally—Shade of Epicurus—they are "jolly good fellows."

House tells us there are 3,211 neuropsychiatrists in this country. Nine hundred and twenty-five devote their full time to the specialty; 315 are in private or semi-private institutions and 665 give only part time—a total of 1,905 in private practice. The remainder are in public service. No specialty in medicine offers a greater opportunity. Like a poet, a neurologist is born, not made. A neurologist must make good; it will not do to say, as can be said of hundreds of thousands of men, "He meant well, tried little and failed much."

Of our charter members, two have died—Dr. Arthur Dunning and Dr. Haldor Snee. To know Dunning was to love him. He was gentle, yet strong; sympathetic, yet virile; in his heart there was the milk of human kindness—a gift indispensable if one is to reconstruct and reintegrate a crushed and hopeless personality. He was a hard worker and achieved greatly. The Children's playgrounds in St. Paul are largely due to his untiring efforts. Dunning Field is an abiding memorial to his civic interest and personal worth. The last year of his life he suffered greatly, being subject to anginal attacks. He made no complaint but continued his work with as much zest and interest as if in usual health. A struggle with an insane patient was followed within a few hours by an anginal attack which caused his death.

More than a quarter of a century ago, I recall Dr. Snee being present at a meeting of the Ramsey County Medical Society, when I made my presidential address. He had recently located in St. Paul as a neurologist. Although he was made Chief Surgeon of the Great Western Railway Company, he never for a moment lost his ardor for neuropsychiatry. Later he became Associate Professor of Nervous and Mental Disease in the University of Minnesota. Of all our members, he was perhaps our most ardent Freudian. Dr. Snee was a most genial gentleman; he seldom missed a meeting of our Society. His discussions were thoughtful, interesting and entertaining. Although ill for several years, none would have suspected it. His quiet courage would lead one to think that, like Beethoven when he found deafness coming fast upon him, as a disastrous addition to the other woes of

life, he said, "I will grapple with fate; it shall never pull me down."

Some fifty years ago, certain philosophers conceived the idea of the subconscious; it was purely an academic concept. It was not thought in any way to influence the activities, the ideals or the life of the individual. Psychology has ever delved into the inner recesses of the mind to find an explanation for all our motives and conduct. Freud would seem to have seized this concept and to have evolved from it his contribution to psychology in the making. According to Berman, his teachings have opened up for us the geology of the soul—quite melodramatic and quite meaningless. Freud, now a septuagenarian, is a notable personality; he stills enjoys his work, and his seventy years, he states, "have taught him to accept life with cheerful humility." "Perhaps the gods are kind to us," he said to Vierick, "by making life more disagreeable to us as we grow older; in the end death seems less intolerable than the manifold burdens we bear." America was the first to recognize his work, yet his opinion of Americans is far from complimentary. He regards them as generalizers, rarely showing a creative mind; they have made, he says, but few original contributions to Freudian psychology (Vierick). Our literature of the last decade has been saturated with his teachings. A writer of distinction said to me that of two hundred books reviewed by her, one only was suitable for the home. Pari passu with the dissemination of this psychology, a startling change has taken place in the home life of this country. Moral progress has declined; ethical values and spiritual realities have markedly lost their former appeal; lawlessness and crime have increased. Obedience, self-restraint and self-sacrifice are more of a memory than a fact. This mechanistic conception of life has made people think of themselves as highly organized machines; the animal instincts are more dominant. Even Mental Hygiene is too frequently a masquerade for the exploitation of the Freudian idea. "The voice is Jacob's voice but the hands are the hands of Esau." Already the social order shows satiety and weariness with this Freudian invasion. With Dr. S. Parkes Cadman, I believe "in the irrepressible resilience of the spiritual instinct." A highly cultured French Baron said to me last winter that the French did not accept Freud's teachings but they did believe that his

philosophy was a great stimulus to the evolution of the New Psychology, which is a distinctly different thing from the Freudian concept.

One can understand this sensualization of the social order, if Vierick, in his interview with Freud, reports correctly his reply to the question "Would we not be happier if we knew less of the processes that shape our thoughts and emotions? We are not made more joyous by discovering that we all harbor in our hearts the savage and the beast." "I prefer," replied Freud, "the society of animals to human society. The savage, like the beast, is cruel, but he lacks the meanness of the civilized man." This lack of appreciation, by Freud, in his psychology, of man's moral worth, of the sanctities of human nature, of the divine impulsions that have entered into the life of man ever since man was man, will largely account for this deterioration of the social order.

I have barely touched upon the great changes that have taken place in neurology during the past forty years. Changes equally great have occurred in its relation to medicine and the specialties in particular. In medicine it has found itself and its great importance is now generally recognized. The medical student no longer regards it with aversion but gladly avails himself of every opportunity that medical schools now offer to acquire all possible knowledge of this specialty. The protean manifestations of nervous symptoms are no longer looked upon as being imaginary or hysterical; these manifold disorders of personality have a cause; only crass ignorance regards them lightly and as a joke. Throwing a pitcher of cold water into the face of an hysteric is as rare now as a phlebotomy. The medical man of today who does not possess a working knowledge of neuropsychiatry is an anachronism for which the medical profession has no place.

Bronson Crothers read a paper before the American Neurological Association at its last meeting, in which he stated that he was tired of mixing formulæ. He discussed the feasibility of pediatricians treating all forms of children's diseases including those formerly classed under neurology. The discussion was side-tracked to mental hygiene and the reaction of the Association to his thesis was not learned. As a matter of fact, for years, the internist, the pediatrician, the orthopedist and the urologist have treated

nervous affections that formerly were cared for by the neurologist—to the psychoses they lay no claim. This invasion of neurology reminds me of a remark made by Bishop Fowler, in his great lecture on Abraham Lincoln, many years ago. "England," said this distinguished divine, "is the greatest robber the world has ever known—yet she has always left more than she has taken"—the specialties have left more than they have taken. The child presents many difficult problems with which the pediatrician is not prepared to deal. There is the evolutionary urge from childhood until personality is achieved, during which the dendrites and axis cylinders grope their way along their predestined paths until the marvelous artistry of the nervous mechanism is complete. In this complex civilization, the adjustment to the home, the church, the school, and the environment is in many cases a matter of great delicacy and requires the skill of a trained and skillful neuropsychiatrist. The distinguished orthopedic surgeon, the late Dr. Gillette, many years ago said to me that one's clientele should come from his own patients; that dependence on his confrères was not to be relied upon for referred work; that the character of work that a doctor does should be a perpetual testimonial to his ability and competency. This was not only good advice but good psychology. Since the development of group medicine, many groups care for and treat their neurological patients. The falling off of this usually referred work has been a noticeable loss to the exchequer of the neurologist.

Greater changes will occur in neurology in the forty years that are to come than in those that have passed. The acute infectious nervous diseases will, I believe, be eliminated. For the chronic nervous affections—progressive muscular atrophy and disseminated sclerosis, which are not abiotrophic but probably arise from a micro-organism, a vaccine or a serum will be found. In the disorders of personality, psychology will strike the dominant therapeutic note. General Wood, who did so much for leprosy, predicted shortly before his death that within a decade it would cease to exist in the Philippines. Sir Arthur Keith says, "Whether it be this year or next, or the year after, I am certain that we shall find a cure for cancer . . . ; increased knowledge of the atom bears directly on medicine and the ultimate knowledge of life may well

be found in physics." The late Sir Frederick Mott has said that in three generations insanity will die out or revert to the normal. Perhaps all this is an illusion of hope. Bacteriology and biochemistry possess dynamic potentialities. You younger men will follow the gleam—you will strive worthily and achieve much. Upon your efforts will depend the accomplishment of this great consummation—your eyes will behold the vision splendid. I have known many distinguished neurologists during the years—master workmen were they—great minds, but withal unpretentious and genial—apparently unaware of their great genius. One name, the late Prof. J. M. Charcot, in my opinion, dominates them all. His great renown was supposed to arise from his studies of functional nervous disease and hypnotism. Nothing could be farther from the fact. Charcot was primarily a pathologist; his most important work dealt with organic nervous diseases; it was his studies of the spinal cord and brain that gave him lasting fame (Starr)\*. First an internist and pathologist; then a neurologist. Like Fritsch and Hitzig and Ferrier, he made important contributions to the localization of the functions of the brain. Starr states that in 1882 he saw only one case of hysteria demonstrated in the whole semester. "Above all," says Sachs, "he was a diagnostician." In his famous Tuesday morning lectures, a calcium light was flashed on the patient—he being the center of the only light in the room. Charcot read the history and then discussed the case. If it were a case of tremor, other cases of tremor were ushered in so that the different kinds of tremor could be contrasted. The patient was sent out and lantern slides were thrown on the screen. The nature of the lesion, symptoms and diagnosis were all before the students—most dramatic, most impressive (Starr). It was medical gossip at that day that the remarkable cases of hysteria seen in the wards of the Salpêtrière were manufactured in the hospital for Charcot's use. It is true that cases of this neurosis were seen there that could not be found in any other hospital. Such was his probity of character that this criticism passed him harmlessly by. So remarkable was his personality, so dearly was he loved and trusted by his patients that his simple

\*The New York Neurological Society and the Section of Neurology and Psychiatry of the Academy of Medicine. Centennial Celebration of the birth of Charcot. Joint meeting Dec. 8, 1925. Archives of Neurology and Psychiatry.

appearance was a most potent suggestion. Sachs gives an excellent illustration of this. "After one of his lectures on hysteria, the entire class was taken up into one of the small wards, in which there were twelve or fifteen women patients. Some of the students were on one side and the assistants on the other and a passage was made for Charcot to pass through the middle. The moment he was seen by the patients, the entire ward fell into an hypnotic state, every patient presenting some form of hypnotic trance." The year following Charcot's death, I reached the Salpêtrière, which, then as now, is a marvelous reservoir of clinical neurology—justly famous and beyond compare. I studied with Jean Charcot, who, to his father's great disappointment, gave up the practice of medicine. As an explorer of the Arctic and Antarctic regions, he has gained a world-wide fame, being the first to approach the South Pole before Shackleton reached it. Commander Charcot had an attractive personality and possessed to a degree, at least, the gift of imparting knowledge that characterized his distinguished father. I saw French neurology at the close of its golden age. There is nothing more remarkable in medical history than the devotion and reverence of Charcot's pupils. "For a period of a little more than ten years (1880-1893) there was not a book published on a neurologic subject in France," says Sachs, "that was not either dedicated to Charcot or written at his inspiration." Charcot, to us younger men, was a beacon light—a dynamic urge. His last years were shadowed by jealousy and acrimonious criticism of distinguished confrères. He suffered from valvular heart disease, age crept apace, yet his dignity and serenity were unruffled. His alertness, mental vision and scientific ardor were undimmed. Thus died Prof. J. M. Charcot, in his sixty-eighth year—a fitting close to a great life.

Forty-five years ago, I began my great neurological adventure. These forty-five years have been characterized by an unprecedented world flux—medical, scientific, social and religious—"with the marvel of today becoming the commonplace of tomorrow." As age advances, this specialty to which I have devoted my life "is my own familiar friend and has helped me over troublous times in so far as that was possible" (Nauyn). It is a long trail from the neurologist of 1882 to the splendidly equipped neurologists of today—from the St. Paul Medical College to the Medical Department of the University of Minnesota—from the apathy and indifference of the pioneer medical men of that day to the keen interest and growing knowledge of things neurological, which is characteristic of the general practitioner of 1927—a long trail, crowded with colorful incidents—years of strenuous struggle, anxiety and joyous endeavor, years of abiding friendships and of great happiness hallowed by blest association with my "comrade incomparable."

James Russell Lowell tells us that the past is a good nurse; memories are life's great dynamic. These lives, during the years that have come within my ken, with their joys, sorrows, hopes, aspirations and dark despair, remind me of what Alcibiades said about Socrates—that he resembled a Silenus mask which the Statares used to keep in their shops, hideously ugly on the outside but when opened found to contain within images of the gods. What patience, what splendid heroism, what courage unsurpassed, have these patients of mine shown when looked at from within.

"Built of tears and sacred flames,  
And by virtue reaching to its aims;  
Built of furtherance and pursuing,  
Not of spent deeds but of doing."

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## PRESIDENTIAL ADDRESS\*

WILLIAM F. BRAASCH, M.D.  
Rochester, Minnesota

THE Minnesota State Medical Association is today in the most prosperous and most vigorous condition that it has ever been. We might well point with pride to the progress that has been made during the present year and sense the pleasure of actual accomplishment. The progress made was due to the hard work of the various committees and the splendid coöperation of the members of our association, and I would like to express my personal pleasure and gratitude for what they have accomplished.

In reviewing the various activities, probably the most important, as well as the most spectacular, achievement was the passage of the Basic Science Bill. If this association never does anything else, it will have justified its existence in bringing this about. It is not so much any direct benefit, either economical or professional, which we may derive from this measure that appeals to us, as it is the fact that the public has recognized that certain fundamental qualifications are necessary to the practice of healing. This principle has never received public recognition and it will go a long way toward the establishment of universal confidence in the ideals of the medical profession. The recognition of the merits of this measure since its passage, by editors, legislators, and numerous intelligent laymen, has been most gratifying. It is realized that in this measure organized medicine endeavored to safeguard the welfare of the public rather than further its own interests.

It is almost unnecessary to repeat what we all feel, namely, that the *greatest* praise should be given to the members of the Committee on Public Policy and Legislation, headed by the redoubtable Doctor Herman Johnson. We are proud of every one of them. Only those who worked with them realize how they labored day and night for months to put this measure across. I question whether we can ever get another legislative committee equal to them. I wish it were possible to keep them intact to fight our future legislative battles.

Do not think for a minute, however, that our

legislative troubles are over. Far from it. We will have to keep eternal vigilance that our labors are not nullified by some amendment or similar means. Although the passage of the major measure was most impressive, let us not lose sight of the other work this committee accomplished. In the passage of the Medical Registration Act we now have a model act of its kind and one which will be of much help to us in cleaning our own house. In addition, this committee succeeded in killing such measures as the Naturopath Bill, the Antivivisection Bill and numerous other propositions of a similar nature. Our Association will never be able to show them our gratitude adequately. I would like to express again our appreciation of the aid given us by those legislators who were friendly to this measure and also to the friendly attitude of our worthy Governor, Theodore Christianson.

It has been said that too much money has been used to put the legislative program over; that money was spent extravagantly and needlessly. It has even been whispered that it was used illegally to influence members of the legislature. In answer to such malicious and unwarranted statements, it should be said that in view of what has been accomplished, the amount of money spent in this campaign is insignificant. Those of us who are familiar with the items of expense know that there was no needless extravagance. We know, furthermore, that not one cent was given as a bribe. Those who criticize some of the methods employed to win legislative favor, none of which were vicious, should rather devote their energies to altering the status of modern society, which necessitates strenuous measures in order to accomplish even legitimate ends. Most of the money spent in this campaign was used to establish a more efficient organization of our State Medical Association, and it could not have been used for a better purpose. The entire profession to a man got back of the legislative campaign and a spirit of coöperation has been developed such as never existed before, and which can be similarly employed in the future, if necessary.

The work of the Committee on Public Health

\*Presented before the annual meeting of the Minnesota State Medical Association, Duluth, July 1, 1927.

Instruction, with Dr. George Earl as chairman, has also been of great importance. We are all only too well aware of the fact that the public is not well informed as to the true aims and ideals of our profession; that many people are not in sympathy with us and that some are in loud sympathy with cultists and quacks. This was very evident during the first legislative campaign for the Basic Science Bill. In fact, it was so painfully apparent that Doctor Frank Savage asked that a committee be appointed, whose chief purpose was to remedy this situation. The work of this committee has been carried on this year in a most satisfactory way. With the very active coöperation of Doctor Meyerding and Doctor O'Brien, this committee has conducted a series of highly successful Public Health meetings and plans to conduct many more. The scope of the committee has been expanded so that it now includes a wide field of activity and is a most important part of the work of this Association. The program that Doctor Earl has drawn up in a business-like way is so ambitious and all-embracing that if it is consummated it will have a tremendous influence on the future of our profession. I would have you all read it carefully when it is published in *MINNESOTA MEDICINE* in the near future.

The Committee on Medical Education and Hospitals, under the guidance of Doctor Pearce, has also accomplished much. This year a large number of available courses have been listed in a systematic manner so that the opportunities for graduate instruction are not excelled by any state. If the various county societies do not take advantage of their opportunities, their officers are not functioning properly. For want of time, I will only mention the splendid work done by the various other committees, but I would urge you to read their reports, which will be published in *MINNESOTA MEDICINE*. However, I cannot refrain from mentioning the painstaking efforts made by Doctor Kennedy, Secretary of the Medical School Committee, who has embodied the results of his investigation in a most complete and instructive report. I must also refer to the excellent work of the Program Committee, which has resulted in arranging the very interesting program you have been enjoying. Among the many developments during the year must be mentioned the initial conference of County Secretaries, which took place in St. Paul last Jan-

uary. Recognition of the great value of the County Secretary in our organization was tardy but well merited. The results of this conference will be far-reaching and should give a stimulus to every county society. It cannot be made too emphatic that the success of our State organization depends largely upon the activity of our county societies.

Incidentally, I would like to call attention to the fact that this is the first year that our Association will be guided by the Articles and By-Laws of our new Constitution. Although much of the old Constitution remains, many changes have been made to conform with the progress of recent years. It now stands as a modern and complete document. While conforming to the standard constitution set by the American Medical Association, it meets our own views and special problems. Much credit should be given to Doctor Frank Savage, and the members of his committee, who devoted a great deal of time and energy to this work.

There is one factor, possibly the most important in our progress, which I have failed to mention, and that is the tireless energy and the resourcefulness of our Secretary, Doctor Meyerding. He was in constant touch with every activity, took an active part wherever he was needed and used all the facilities at his command to further our interests. The Bulletins which he issued in terse, crisp messages, kept us all informed and continually stirred with enthusiasm. He has been a powerful factor in correlating the various health activities of the state. I trust that this latter movement may develop still further in the future so that the State Medical Association will be linked more closely with every agency which furthers health in any form.

It is very evident that all of these activities would have been impossible without working capital. Without the increase in dues, the legislative campaign and the work of the other committees would never have been possible. In view of what has been accomplished, I am sure that there is no one here tonight who begrudges the annual dues. So much remains to be done that unless the dues remain at this rate much of the good that has been accomplished will be lost.

One of the most promising features of our State Association is the increased activity and the spirit of good will existing in many of our county societies during the last few years. The

lethargy, the lack of purpose, the petty jealousies and discord that existed in many county societies several years ago have given way to a new spirit. Thank heaven, we have learned that belittling of ability, slurring and stabbing our fellow practitioners in the back is productive of no good; that it never wins a patient, but, instead, drives him elsewhere and makes him distrustful of all medical aid. There now exists in our ranks a greater spirit of harmony, a desire for coöperation, a sense of satisfaction that the State Association has accomplished much for its members. There is a general feeling of confidence in the future and a belief that more good will come from the organized efforts of our Association. Let us keep this spirit intact and let us make its influence felt in every county of our state.

Much of this good will has been brought about by regular dinner meetings where, gathered around the table, members had an opportunity to really get acquainted with one another, and iron out their difficulties. As we learn to know our colleague, we will usually overlook any shortcomings that he may have, realizing that we probably have as many. Many county societies have programs of real merit, including not only scientific papers, clinics and discussions, but consideration of economic subjects as well. Not long ago I had the pleasure of attending a meeting of a rural county society, where a program was given which would have done credit to this meeting. It is my hope that every county society will have an active organization, with a live secretary, a wide-awake delegate, and functioning public health and medical education committees. If it has not, get busy and get them. Incidentally, I would like to say that it would give me much pleasure to get in personal touch with as many of the county and district organizations as possible during the remainder of this year.

A most important accomplishment of the present year is the selection of Minneapolis for the next convention of the American Medical Association. Although it is true that most of the credit for this belongs to our brethren from Hennepin County, nevertheless, the State Association is proud to have taken part in the campaign. In asking the convention to come to Minneapolis it was emphasized that the invitation came from the physicians of the entire state, that the Minnesota State Medical Association

would act as hosts in coöperation with the Hennepin County Medical Society. That means, ladies and gentlemen, that we will have to play our part in this agreement and help make it the greatest meeting ever held. While the details will be left to the various local committees, and to the incoming officers of the State Association, we can now make a pledge that at least 90 per cent of the members of the State Association will be present at the meeting. That in itself will be evidence of our good will and active backing. But we must do more than that—we must open wide the doors to the beauties of our state. Visitors must be urged to visit, under personal supervision if necessary, our beautiful lakes and streams—to see our great natural resources, to come and tarry in this wonderful region of Northern Minnesota extending up to the Canadian border.

We are looking forward with great expectations to this meeting. We realize that its influence will be far-reaching and that it will be of great benefit, not alone to our own state, but to the entire northwest. It is difficult for those of us who do not have the opportunity to attend the annual meetings of the American Medical Association to realize what a powerful organization it has now become. This meeting, with its multitude of interests, both legislative and scientific, its open meetings, and its exhibits, is an event of the greatest importance. While no one can get it all, nevertheless, impressions can be gained that will make one familiar with many of the activities in which the association is engaged.

We have with us this evening as one of our honor guests a man who has been representative of the great work carried on in the Councils of the American Medical Association for many years. He has been identified, as you all know, with the Judiciary Council, and has played a most important part in making the American Medical Association what it is today. He exemplifies what in my opinion is the ideal of every medical man—namely to strive to make himself most skilled in his profession and at the same time to do something to promote the best interests of his fellow practitioners and of public welfare. This Doctor Harris has done. He is widely recognized as one of our most able surgeons and at the same time he has devoted much of his life to solving the problems of his fellow practitioners. All honor to him—and I trust

that the time will soon come when the American Medical Association will give him more concrete evidence of appreciation.

It is of interest to note the changing attitude of our profession toward organization and the solution of medical, economic and allied problems. The term "medical politician" was formerly employed as a term of reproach. It was applied to that type of individual whose sole endeavor was political, who busied himself with efforts to land either himself or members of his machine into the offices of the medical organization, be it county, state or national. While some of this spirit still exists in some states and to some extent in our national organization, I am glad to say that there is mighty little of it existing in the Minnesota State Medical Association. Instead of medical politician I would suggest statesman, and as such refer to the physician who devotes some of his time and endeavor in legitimately advancing the best interests of his profession, together with that of public welfare. This is necessarily done at a sacrifice of his personal interests and is deserving of praise and commendation rather than cynicism. In fact, I am quite certain that any medical man who devotes some time to this purpose becomes a broader man, and, as a result, a better practitioner. As an example of a medical statesman, if you please, I can refer to no one more worthy of the name in our ranks than our new President, Dr. C. B. Wright. The time, effort, and sacrifice that he has made, not to mention the wise counsel and excellent judgment that he has employed in furthering the best interests of this Association, have been justly recognized. His election to the highest office that we could bestow was most appropriate, for it could have been given to no one who was more worthy.

The question may well be asked, "What shall we do with our ex-presidents?" Herman Johnson has solved this problem. Although he may no longer wear the royal crown or the imperial

purple, he still sticks to the typical American coat-of-arms, namely his shirt sleeves. If ever a man literally tore off his coat and got into the game in these last few years, it has been Herman Johnson. The long list of things accomplished for our Association during his benign autocracy is too long to detail and is familiar to you all. In fact, his era has been of such importance that this Association might well regard it as the beginning of our modern history, and refer to events as happening one or two years B. J. or A. J. as the case may be. However much he may try to hide his light under a bushel; however generous he may be in giving credit to his associates on the Legislative Committee and to the other fellow; however appreciative he may be of the valuable aid rendered him by many members of our Association, nevertheless, the fact remains that, if it were not for Herman Johnson, the remarkable legislative program which has been accomplished this year would not have been possible. Those of us who have worked with him know what a sacrifice he has made, not alone of his practice and financial returns, but that he gave unstintingly of his energies, his health and his very life blood for the cause. It would be impossible for this Association adequately to show its appreciation of what he has done in our behalf. We might create for him the position of President Emeritus, but that would insinuate advanced age and that his period of active usefulness was over. This is farthest from our thoughts, for we hope that we may long continue to benefit by his wise counsel and his active co-operation in solving our problems. However, as a token of our appreciation of the distinguished services you have rendered the Minnesota State Medical Association, Doctor Johnson, I have the honor, as their representative, to present you with this watch. May the hours that it measures in your future years be filled with happiness and good health.

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## THE TREATMENT OF ACUTE EMPYEMA\*

J. M. HAYES, M.D.  
Minneapolis

**I**N this paper I have considered the treatment of only the acute form of empyema. Proper treatment of the acute type is the best assurance against a chronic condition.

Previous to the World War the treatment of acute empyema gave the average surgeon little concern. Lilienthal says: "For years the primary treatment of empyema of the thorax has been neglected. The cut and dried methods of the past decades with an appalling mortality have gone on with practically no improvement because of the lack of investigating interest on the part of the surgeon." Moschowitz says: "Many surgeons labored under the delusion that their results in this condition were much better than they were."

Few statistical studies had been made up to the time of the World War. The few authentic statistical studies which had been tabulated up to this time reveal the inadequacy of the standard treatment.

Wilensky working with Moschowitz, in 1914, tabulated statistically the results of two hundred and ninety-nine consecutive cases treated in Mt. Sinai Hospital, during the preceding ten years. The mortality rate was 28 per cent. Peck and Cave studied ninety-four cases in the Roosevelt Hospital, between the years 1915-1920. The mortality in this series was 19.1 per cent. Lilienthal and Ware, in 1916, studied sixty-six cases in Mt. Sinai Hospital. They record a mortality of 20.5 per cent. Eggers, at Camp Jackson, studied seventy cases before the great epidemic of 1917. The mortality rate was 27 per cent.

Cameron of Guy's Hospital reported a 70 per cent mortality in children during the first year, and a 50 per cent mortality during the second year. Of fifty-nine cases with early rib resection thirty-nine died and thirteen recovered. Holt reported two hundred and four cases of empyema in children with a mortality of 74 per cent during the first year and 59 per cent mortality during the second year.

\*Read before the annual meeting of the Minnesota State Medical Association, Duluth, Minnesota, June 30 to July 2, 1927.

Other figures up to this time agree essentially with the above mentioned. Considering the fact that these men and the hospitals in which they worked rank among the highest in this line of work, these figures indicate the inadequacy of the established method of treatment for acute empyema. Early open operation with resection of one or more ribs was the prevailing method of treatment up to this time.

With the uncomplicated pneumonococcic type of empyema, the immediate results with this form of treatment were fair. It has been generally considered that practically all of the ordinary civil cases are the purely pneumonococcic type.

Slide #1.  
STATISTICAL STUDIES OF EMPYEMA PATIENTS BEFORE THE WORLD WAR.

BY WHOM REPORTED	DATE	PLACE	NO. OF CASES	MORTALITY RATE.
Wilensky	1904-1914	Mt. Sinai Hospital	299	28%
Peck & Cave	1915-1920	Roosevelt Hospital, N.Y.	94	19.1%
Lilienthal & Ware	1916	Mt. Sinai Hospital	66	20.5%
Eggers	1917	Camp Jackson	70	27%

Pleural exudates from five hundred and seventy-four of these cases were examined in Mt. Sinai Hospital. One hundred and thirty-three of these contained streptococci. Others have been found on close examination to contain staphylococci or a mixture of all three organisms. The tubercle bacillus may be present and not be detected in the early stages. These facts would suggest that we must not too readily come to the conclusion that we are dealing with an uncomplicated type of pneumonococcic empyema.

The prevalence of the streptococcic type of empyema during the World War is well known. It was in this type especially that the early open drainage with rib resection proved disastrous. The mortality rate during the early epidemic in the army cantonments was so appalling as to bring about the appointment of a special Emphyema Commission, by the United States Surgeon General. This commission was made up of thoracic surgeons of the medical corps of the

United States Army. At Camp Lee, West Virginia, it took up its work of investigating and devising means for obtaining better results with empyema patients.

The mortality rate at Camp Lee, under the standard treatment of early open operation was 48 per cent. Replacing this method by early aspiration and later partially closed drainage and irrigations with Dakin's solution, the mortality in these cases was reduced to 4.3 per cent.

The preliminary report of this commission with these remarkable results aroused the interest of those treating empyema in other army camps throughout the United States. Stone of Fort Riley, Kansas, soon turned in a detailed report on three large series of cases. In the first series of eighty-five cases between October, 1917, and January, 1918, with early open drainage, his mortality was 61.2 per cent. In a second

with a mortality rate of 48 per cent with early open drainage. Later with the closed method of Mozingo he reported a mortality rate of 7 per cent. Sherrill from Camp Sherman reported a 50 per cent mortality with early open drainage; with the closed method 5 per cent. From Camp Lewis, a mortality of 25 per cent was reported with early open drainage. Later, seventeen cases were treated by the closed method with no mortality.

No doubt the virulence of the bacteria had considerably abated since the beginning of this epidemic. This accounted to some degree for the reduction of the mortality rate in these patients.

However, it is true that Camp Lee and other camps at which the closed method of drainage had been adopted were reporting a very low mortality, while in others where the early open oper-

## SLIDE #2.

## STATISTICAL STUDIES OF EMPYEMA PATIENTS MADE DURING THE WAR.

BY WHOM REPORTED	DATE	NO. CASES	PLACE	MORTALITY WITH EARLY OPEN DRAINAGE	MORTALITY WITH CLOSED DRAINAGE
Empyema Commission	1917-1918	140	Lee, W. Va.	40%	4.3%
Stone.	1917	275	Fort Riley	61.2%	9.5%
Rodman.	1918	240	Camp Dowes & Ogilthorpe	48%	10%
Dederick.	1917-1918	147	Camp Pike	48%	7%
Sherrill.	1917-1918	Not Stated	Camp Sherman	50%	5%
Camp Dodge	1917-1918	----	Camp Dodge	64.8%	5%
Camp Lewis	1918	----	Camp Lewis	25%	No Mortality.

## Slide #3.

## STATISTICAL STUDIES OF EMPYEMA PATIENTS FOLLOWING THE WORLD WAR USING CLOSED METHOD OF TREATMENT.

BY WHOM REPORTED	DATE	NO. CASES	PLACE	MORTALITY RATE.
Mozingo.	1919	114	Walter Reed Hosp.	2.6%
Whittimore.	1920-1924	100	Mass. Gen. Hosp.	6%
Patterson.	1922-1925	31	Bridgport Hosp.	4.7%
Manson.	1920	43	-----	No Mortality.
Flint & Douglas.	1920	102	Yale Clinic.	No Mortality.

series of ninety-six cases between January, 1918, and August, 1918, treated according to the principles laid down by the Empyema Commission, the mortality rate was reduced to 15.6 per cent. In a third series of ninety-four cases treated by the same method with added experience and skill the mortality was reduced to 9.5 per cent.

One camp after another throughout the United States took up this line of treatment and reported favorable results. Camp Dodge at first reported a mortality of 64.8 per cent. Later the mortality was reduced to 5 per cent. Rodman saw two hundred and forty cases, between September 15 and October 10, 1918. With early open operation the mortality rate was 45 per cent. Later with the closed method it was reduced to 10 per cent. He states that at first he was opposed to the use of Dakin's solution in the pleural cavity but became converted to its use during this time. Dederick, from Camp Pike, reported one hundred and forty-seven cases

with still the method of choice, a very high mortality rate existed.

Many accurate statistics have been tabulated since the war which tend to show that the principles suggested by the Empyema Commission paved the way for a decided advancement in the treatment of acute empyema. Mozingo of Walter Reed Hospital, who popularized what may be termed the actual closed method of drainage, reported one hundred and fourteen cases with three deaths. Manson, following the method of Mozingo, reported forty-three cases with no deaths, no secondary operations, and no chronic conditions. Flint and Douglas of the Yale Clinic reported one hundred and two cases with no deaths and no chronic cases. Whittimore, from Massachusetts General Hospital, reported one hundred cases with six deaths. Most of these six cases had not been treated according to the recently established methods. He emphasizes early operation by the closed method,

under local anesthesia, and the intelligent use of Dakin's solution. Binnie, from the Boston City Hospital, between 1920 and 1924 reported one hundred cases with a mortality of 13 per cent. These cases were not treated by any one man, but rather promiscuously by various men, without regard for the principles laid down by the Empyema Commission.

As suggested by Heuer of Johns Hopkins, complications and chronic conditions usually result from inadequate treatment of the acute condition. In the cases studied by him the mortality rate was 50 per cent in complicated cases, while in uncomplicated cases it was 6.5 per cent. He states that early open drainage produces an inevitable pneumothorax, disturbs the mediastinal structures, lessens the vital capacity, and impedes the expansion of the lung.

Closed drainage, properly carried out, not only eliminates the above hazards to a large extent, but is more comfortable to the patient and tends to prevent complications and chronic conditions.

For dissolving the plastic exudates which tend to hold the lung in collapse, and cleaning out the pleural cavity, nothing, so far, surpasses Dakin's solution irrigations. Moschowitz says: "The far reaching observations at the War Demonstration Hospital of the Rockefeller Institute have taught us that empyema cavities can be rendered bacteriologically sterile by means of the Carrel-Dakin treatment." Here it was first shown that these cavities could be safely irrigated with Dakin's solution and could be made sterile by this means even to the point of closure without recurrence.

Stephens has shown that of fifty-six cases treated with simple drainage without Dakin's solution irrigations there were fourteen recurrences, or 25 per cent. While of sixty-seven cases irrigated with Dakin's solution, there were only eight recurrences, or 12 per cent. Graham says that Dakin's solution not only sterilizes the pleural cavity but its solvent action effects a decortication of the lung and thereby obliterates the empyema cavity.

Moschowitz, Graham, Lilenthal, and other prominent thoracic surgeons who have made an exhaustive study of this condition believe that with prompt diagnosis, with early closed drainage, and intelligent use of Dakin's solution irrigations, the mortality rate in empyema patients

should be reduced to a minimum, and few chronic cases result. Such mutilating operations as the Shede, Estlander and Delorme would then be little called for.

Regardless of the type of empyema, the early closed method is the safer. After the general condition of the patient has improved and the size of the cavity is reduced to a small capacity, little harm can come to the patient from open drainage. Occasionally, the process will become stationary when the capacity of the cavity is down to two or three ounces. In such cases resection of the ribs over this cavity, allowing this portion of the chest wall to collapse, is the method of choice. Many methods have been suggested for instituting closed drainage and maintaining negative pressure, but usually the simplest is the best. Forced inspiration usually aids lung expansion. Blow bottles serve the purpose well.

As soon as empyema is recognized, the exact location of the pus should be demonstrated by means of the *x*-ray. A needle, at least twenty-two gauge, is then inserted at the lowest point to confirm the presence of pus. A 22 F. catheter should then be introduced at this point by means of the trocar and cannula. If the empyema is at the base of the lung, the site of election for drainage is usually in the eighth intercostal space in the posterior axillary line.

The greatest precaution must be taken in inserting the catheter to prevent the entrance of air into the pleural cavity. Many methods have been devised for fastening the tube in place, once we have it inserted. Four adhesive strips about two and a half by six inches serve the purpose well, two strips extending vertically and two horizontally, closing the opening tightly about the tube. A narrow strip of adhesive about the tube, through which a safety pin passes, keeps the tube from slipping out of place. If the cavity contains more than a pint of pus it should not all be evacuated at the first session. Dakin's solution irrigations are given every two hours during the first four or five days or until the cavity shows a marked decrease in size and septic symptoms subside.

When the size of the cavity is reduced to two or three ounces there is no objection to doing a rib resection for open drainage or resection of all the ribs over the cavity, thus collapsing this part of the chest wall. However, when the sit-

uation is explained to the patient, he usually chooses to continue the closed method, even if it may require a little more time.

The tube may be removed when no more bacteria can be found in the discharge and the cavity practically obliterated. The patient should be watched closely for several months or even years afterwards, for possible reaccumulation of pus in the pleural cavity.

I have three cases which fairly well illustrate the various types of empyema.

*Case 1.*—Baby B., two years of age, contracted pneumonia. Empyema developed during the pneumonia process but was not recognized early. Several aspirations were done when the condition was recognized, and closed drainage was instituted. The temperature was 105 degrees when drainage was started. This was

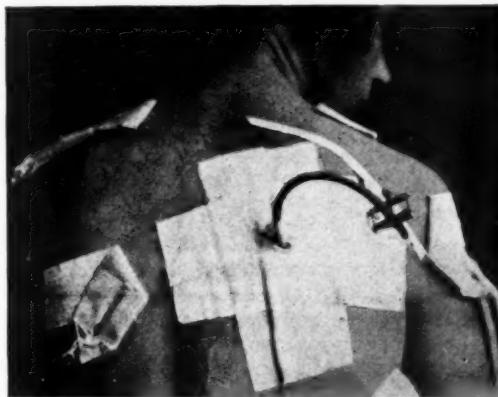


Fig. 1. A simple method of instituting closed drainage.

a streptococcal empyema such as we saw during the war. The child developed otitis media, suppurating glands of the neck, and ran a rather stormy course, but the cavity was finally made sterile and closed down on the tube. The tube was removed after a little over two months from the time of its insertion. The child has been watched closely since for recurrence, but there has been none so far.

*Case 2.*—Miss E., aged 32, contracted unilateral pneumonia in April, 1926. After two weeks the pneumonia subsided. A few days later an interlobar empyema was recognized on the left side. Closed drainage, after the method of Mozingo, was instituted. Irrigations with Dakin's solution were carried on every two hours for the first five days. The patient developed a bronchial fistula and Dakin's solution irrigations were discontinued for a short time. After a few days the Dakin's solution irrigations were again used in spite of the fistula. The patient was placed in such a manner that the cavity was in the most dependent position and soon we learned the amount of Dakin's solution that could be used without giving the patient distress. After four or five weeks we suggested rib resection to the

patient, but she preferred to wait and take a chance at the cavity closing without resection. In a little over six weeks the cavity was sterile and almost obliterated. The tube was then removed and the patient watched closely since.

*Case 3.*—Mr. F., forty-nine years of age, had pneumonia in 1916, followed by empyema. The accumulation of pus was so great that it practically collapsed his right lung. The condition was not recognized until he began to raise large amounts of pus. He hoped to clear up the condition by raising the pus. This continued for nineteen months until 1918, when he was brought in on a stretcher and closed drainage instituted. After the cavity was fairly well cleaned out and the patient's condition improved, a Delorme decortication of the lung was done. There was some expansion following this but the lung did not come out to more than one-third of its normal size. The cavity was again irrigated with Dakin's solution and in 1921 was allowed to close as a sterile cavity. For three years this cavity remained apparently sterile, but in 1923 he developed toxic symptoms and examination revealed the presence of pus in this cavity. Closed drainage was instituted and Dakin's solution irrigations again begun. His symptoms cleared up and the patient returned to work and has been working continuously since. For the past two and a half years he has an open drainage tube, and changes the dressings himself. He does not feel that he can take the time for further treatment.

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#### INTRODUCING NEW DRUGS

The report on blueberry leaf extract which the Council on Pharmacy and Chemistry publishes, illustrates the praiseworthy and increasing tendency on the part of the large pharmaceutical firms to adopt the ideal method of introducing a new drug, namely, demonstration of the drug's chemical identity and uniformity; report of animal experiments giving promise of therapeutic value; report of clinical trials under the auspices of the discoverer; and provision for confirmatory study of the drug's therapeutic worth by independent investigation. What a contrast to the unscientific and haphazard flooding of the market with new and untried drugs that formerly obtained here and still obtains abroad! The change has arisen from the increasingly critical attitude of the American medical profession. This, it seems reasonable to believe, is due to the faithful and persistent work of the Council on Pharmacy and Chemistry. (Jour. A. M. A., November 5, 1927, p. 1610.)

#### BLUEBERRY LEAF EXTRACT

The Council on Pharmacy and Chemistry publishes a preliminary report on a blueberry leaf extract which has been proposed for use in the treatment of diabetes. A report on this product was read at the last meeting of the American Medical Association by F. M. Allen, who had continued the work begun in Germany by Wagner and others. The product used by Allen was made by E. R. Squibb & Sons; it is not being marketed and will not be offered to physicians in general until its usefulness has been demonstrated. The Council published its preliminary report to call attention to the possible usefulness of the blueberry leaf extract used by Allen. At the same time the Council points out that thus far no standards have been developed which will insure a uniform product; that the actual value of the product in the treatment of diabetes has not yet been proved; and that such proof must come from workers who have the necessary clinical opportunities and laboratory facilities on which to base judgment. (Jour. A. M. A., November 5, 1927, p. 1607.)

## IMMOBILIZATION IN THE TREATMENT OF PULMONARY TUBERCULOSIS\*

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THE title "Immobilization in the Treatment of Pulmonary Tuberculosis" brings to mind several thoughts. It recalls Krause's pertinent statement that "rest remains our sovereign remedy for tuberculosis." It reminds one that rest in bed alone offers sufficient lung immobilization, a relative one only to be sure, to attain an arrest of from 80 to 90 per cent of first stage or minimal cases of lung tuberculosis; that approximately half of the second stage or moderately advanced lesions are restored to a productive capacity by bed rest alone, and a goodly number of far advanced patients also.

And then our attention swings over to those other cases so frequently classed as hopelessly ill, for whom simple bed rest is inadequate. Among this group we find those whose disease proceeds apace despite the most skillfully supervised sanatorium regime, and also those whose lesions smolder along indolently, resenting any attempt at exercise by exacerbation or extension or metastasis, and still again that fairly large number whose general condition returns to normal but with the tenacious persistence of cough with bacillary sputum. What further can be done for these unfortunates, the great majority of whom are doomed indubitably to fill early consumptive graves if left unaided? Can anything in the way of more efficient lung immobilization be instituted?

There have been a number of answers to these important questions in the years gone by; some of them productive of indifferent results, others good and still others excellent. And all of these answers hinge on the basic principle of rest. Efforts have been made to restrict the movements of the chest wall by external force with weighted bags, by training patients to lie on the more diseased side, with tight adhesive strapping, with plaster casts around the chest, with light metal jackets having facilities for producing pressure by inflating rubber pockets, etc. The importance of slow and strictly diaphragmatic breath-

ing has been stressed in order to obviate costal respiration which affects chiefly the upper lobes. All of these measures have had their enthusiastic advocates and probably have done some good, though eventually not measuring up to the high expectations of their respective advocates.

Three other measures for securing more perfect immobilization of a tuberculous lung have been used and proved sufficiently efficacious to warrant our incorporating them in our standard armamentarium. Artificial pneumothorax, extrapleural thoracoplasty and avulsion of the phrenic nerve in my opinion have arrived to remain permanently, pending the discovery of some specific chemotherapeutic agent.

I do not purpose taking up the historical and technical phases of artificial pneumothorax nor considering its complications and dangers except to let fall Woodcock's remark that "there are dangers in connection with the production of artificial pneumothorax, but the greatest—and about this let there be no mistake—is the neglect in which it is held."<sup>1</sup> Neither shall I dwell on the history of thoracoplasty or phrenicotomy, the technical features of which are not within the field of this paper. But I do want to consider briefly the indications for each, results and comparative values.

Since 1912 when the widespread use of induced pneumothorax began in this country there has been a noteworthy change in the opinion of most experienced men regarding the indications for inducing pulmonary collapse for tuberculous disease. Recurrent and ungovernable hemorrhage still retains its place as one of the cardinal indications. But the custom of considering pneumothorax only as a last resort measure for far advanced disease has been modified by thoughtful and progressive workers. The substance of this modification is that, irrespective of anatomical extent, any unilateral lesion progressive in nature, despite strict bed rest, warrants an attempt with induced pneumothorax, provided, of course, that contra-indicating complications are absent. The two cardinal indica-

\*Read before the annual meeting of the Minnesota State Medical Association, Duluth, Minn., June 30 to July 2, 1927.

tions for using collapse therapy in treating pulmonary tuberculosis, therefore, are, repeated or uncontrollable hemorrhage and progressive unilateral disease, be that disease, first, second or third stage. And bear in mind that a goodly percentage of these cases are acute or subacute in nature.

The first indication for the operation of extrapleural thoracoplasty is that the case be one favorable for pneumothorax therapy but pleural adhesions either have prevented the introduction of any air at all or a useless partial collapse has been effected. Here in general, as with air collapse cases, we are limited essentially to one-sided lesions. But there are much finer considerations one must note in selecting patients for this extensive rib resection operation. It must be borne in mind that we are submitting persons with a notoriously debilitating disease to not one but two and possibly three or four truly major operations. The better the general condition of these patients the less will be the operative mortality. Archibald expresses this succinctly in describing the ideal thoracoplasty case as the "*good chronic*" one. Lilenthal remarks: "Of special significance is the stage of the disease with which we are dealing. The older the lesion the better the chances of cure; that is, the more fibrous or productive are, as before stated, more favorable than the recent or progressive."<sup>2</sup> More specifically this implies a comparatively good general condition with relative freedom from toxemia. Please note the dominant theme of chronicity in these indications as contrasted with the relatively more acute trend in pneumothorax indications.

Hemorrhage is usually mentioned as an indication for thoracoplasty collapse and to me it seems a rather dubious one. The marked physical trauma incident to this operation is getting somewhat away from the rest and quiet so imperative to a bleeding lung. In treating tuberculous empyema which has failed to respond to repeated aspirations or to formalin in glycerine injections, thoracoplasty achieves brilliant results and in a much more satisfactory manner than other radical surgical operations because not only is pleural apposition achieved but the diseased lung is kept compressed (my thought here being of those empyemas which complicate therapeutic and spontaneous pneumothorax).

Avulsion of the phrenic nerve is of value

when used alone chiefly in unilateral basal tuberculosis. It has been used also in cases that have resisted air induction because of pleural synechia and who are too ill for immediate thoracoplasty, in the hope that it will afford sufficient immobilization to check the progressiveness of the disease, thereby restoring a more promising general physical condition so desirable before thoracoplasty is done. Sauerbruch thinks this operation on the phrenic nerve will diminish the tendency to effusion as a complication of artificial pneumothorax. Of most importance is the usage of this simple procedure, particularly by continental men, preliminary routinely to thoracoplasty. This I am doing at the present time unless the diaphragm is fixed by adhesions and it appears to me most rational because a lung which needs the additional rest and degree of collapse afforded by a formidable procedure such as thoracoplasty can stand and should have the additional rest and relaxation afforded by diaphragmatic fixation. And the time to do this is before surgical collapse, as it is comparatively easy then, whereas, afterwards, it may be exceedingly difficult due to the change in the normal position of the nerve resulting from the retraction and deformity following the rib operation.

Do the results of these measures designed to immobilize the lung warrant our continued usage of them? Saugman<sup>3</sup> in reporting 310 cases in whom successful pneumothorax was induced, notes 34 per cent working after two to ten years. Amberson and Peters<sup>4</sup>, in surveying the results in 139 patients, find 30 per cent living and working under conditions approximately normal. Rist<sup>5</sup>, in his series of 759 cases, has 52 per cent clinically well and working. In my own group of 130 pneumothorax cases 30 per cent are symptom-free and occupying a useful position in society.

Alexander<sup>6</sup> has collected 836 thoracoplasty cases reported since 1917. He found successful results in 33 per cent; a further 24 per cent were much improved, making a total of 57 per cent operative successes. There was a 12 per cent mortality within one month following the operation. I have resorted to thoracoplasty in twenty-three instances, with an initial mortality of 12 per cent. Eight, or 32 per cent, of these are in splendid condition with negative sputa; six of these are working.

Phrenicotomy alone has been used so infrequently that the figures are not impressive and very few are to be found. Sauerbruch<sup>7</sup> reports distinct improvement in seventeen out of sixty operated cases. I have resorted to it alone in only four cases, three of which were basal lesions and these were markedly benefited.

Before passing judgment on these figures it is well to reflect that no mild or transient malady has been under consideration. Progressive tuberculosis of the lungs is a deadly disease; it kills people, not quickly as a rule, but with awful certainty. And if we have a measure or combination of measures which when advisedly used will take a selected number of otherwise fatally ill persons and put back to work from one-third to one-half of them, there can be no doubt from a rational mind that the achievement is nothing short of brilliant. Better results could have been, and certainly will be, accomplished with improvement in technic and a wider appreciation of suitable indications. For the present, however, let us be content with the firm conviction that the virtue of these procedures to accomplish more efficient lung immobility is definitely proved beyond any discussion.

Before passing on to a short consideration of the comparative value of the first two of the three procedures just alluded to, I would like to insert a word regarding the place in which these measures should be instituted. There is no question in my mind but that the modern sanatorium is the ideal place. The cures effected by more efficient immobilization are not over-night accomplishments. Months and months of intelligent and skilled supervision are necessary and in the home or general hospital this is well nigh impossible. And as a corollary it is obvious that our sanatoria should be properly equipped.

The comparative value of pneumothorax treatment and thoracoplasty is beginning to engage our attention. And I presume it is natural, for whenever any malady, social, spiritual, economic, physical or what not, is combated successfully by more than one measure there eventually arises the question as to which is the most satisfactory one for general use. And in this particular field the discussion has been stimulated by the figures of Alexander showing good results following thoracoplasty in 57 per cent of cases compared with good results in

pneumothorax varying from 30 to 52 per cent, the 52 per cent being those of Rist, which is the most recent large series I have seen. Those who assert that here is sufficient evidence for the use of thoracoplasty to the exclusion of pneumothorax are reasoning superficially. Such a conclusion would, of course, be acceptable, were all of Alexander's cases exact duplicates of, for instance, Rist's. But who ever heard of even two cases of lung tuberculosis being twins in every detail? To consider the reports of ultimate results alone is scratching the surface only.

The indications for the application of pneumothorax and thoracoplasty I have outlined to you; essentially progressive disease for the one, chronic more or less stationary for the other, or, expressed in a clearer pathological manner, predominantly exudative lesions for pneumothorax, for thoracoplasty those essentially proliferative. Can there be any question as to the choice of these two procedures in treating for instance an extensive lesion of recent origin attended by marked toxemia? In order to check profuse hemorrhage is thoracoplasty with its inevitable and marked physical insult to the chest to be compared with the gentle, painless and bloodless insertion of a pneumothorax needle? Then, too, the initial mortality following thoracoplasty in the first month is from 10 to 20 per cent. It is practically zero with pneumothorax. Thoracoplasty affords permanent collapse and if disease appears in the good lung our hands are tied. With pneumothorax partial or complete expansion is very possible and I have had occasion to utilize this factor enough to know its true worth. And is it not true that exudative types of tuberculous disease extend and metastasize much more frequently than do the proliferative ones?

We must look at the other side of the fence. Thoracoplasty patients are through with active measures as a rule with the completion of their second stage operation. Collapse cases must return for refills. Surgically collapsed individuals are not annoyed as a rule by pleuritic effusions (some of which become purulent) as are the majority of air collapsed persons. And, too, pleural shock, air embolus, perforation and rupture of the lung are to be thought of only with pneumothorax cases.

But the crux of the matter is that basically we are using and should use these remedies for

types of disease which differ radically. For, by and large, pneumothorax people are those who by themselves exhibit a low resistance to the tubercle bacillus or else are overwhelmed by an enormous dosage. And thoracoplasty cases as a rule are those in whom is found testimony of a magnificent defense as witnessed by abundant fibrosis. Is it not fair to assume, if thoracoplasty were done for all cases suitable for pneumothorax, that because of the high percentage of acutely or subacutely ill persons in this class the initial mortality would jump to a forbidding figure?

Why should we even attempt to compare these two measures or to choose between them? Why

not be thankful we have them both, using each when indicated, supplementing or replacing pneumothorax by thoracoplasty as we must at times, and allot each credit where credit is due.

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#### THE MOUNT CLEMENS BATHS

The Mount Clemens mineral springs are unusually strong solutions of salines, giving off the pungent odor of hydrogen sulphide. They are not thermal springs; the water is heated in bath houses. Patients with chronic rheumatic, neuritic and neuralgic disturbances are especially likely to be benefited by such baths. The use of hot procedures is dangerous in all conditions of profound general weakness, enfeeblement of the heart and degeneration of the arteries. Patients with a tendency to rise in temperature should also not be subjected to heat procedures. Medical supervision is absolutely required to secure good results. What folly it is for people to go to Mount Clemens and other bathing resorts, jump into hot mineral baths and drink a lot of strong saline water, trusting to Providence to take care of the rest! (*Jour. A. M. A.*, November 5, 1927, p. 1625.)

#### SOLUTION OF PITUITARY FOR INDUCTION OF LABOR

The application of solution of pituitary to the nasal mucous membrane as a means of induction of labor has been reported on. Under direct vision with reflected light and the use of a speculum, the nose is cleansed and a pledge of cotton, moistened with 1.25 c.c. of solution of pituitary, is inserted snugly under the anterior end of the inferior turbinate of the nostril. At the end of an hour or two the pledge is withdrawn. If necessary, a fresh pledge is applied to the other nostril. The procedure is reported to have been successful in every one of fifty-six cases in which it was used. In a series of twenty-four cases to test the method in normal pregnant women during the last month of pregnancy and at term, there were nine failures. All the babies were born alive. (*Jour. A. M. A.*, November 12, 1927, p. 1696.)

## THE PHYSIOLOGY OF THE LIVER AND THE GALLBLADDER\*

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**I**N a brief presentation of such a broad subject as the physiology of the liver, I can hope to do nothing more than arouse interest in the largest and one of the most important organs of the body. The magnitude of the subject can be estimated from the fact that few physiologic activities of the body can be considered without the inclusion, directly or indirectly, of some phase of hepatic function. I shall enumerate only certain of the major functions of the liver and emphasize certain phases of its activity which at present appear most significant in clinical medicine.

Life in all the higher organisms is dependent on the constant activity of the liver in regard to one of its functions, the regulation of the concentration of sugar in the blood. The results of experiments on animals from whom the liver has been removed, and experiments and clinical observations on the action of insulin, have demonstrated that a certain minimal concentration of sugar in the blood is essential to life in the higher organisms. As a matter of fact, the concentration of sugar in the blood may be included in the group of physiologic constants along with the temperature of the body, the number of circulating red cells, the amount of hemoglobin, the pulse and respiratory rate, the blood pressure, and so forth. Normally the concentration of sugar in the blood remains constant within narrow limits. When the amount decreases below a certain critical level, definite symptoms appear and on further decrease, death ensues. There is a great possibility for extensive and rapid changes in the blood-sugar level. For several hours after the ingestion of carbohydrate, glucose is taken into the blood stream. The body utilizes glucose for the production of heat, for muscular exertion, and possibly for other cell activities, at a variable rate. Also glucose is removed from the blood stream to be stored as glycogen or converted into fat. Through all this wide range of variation of entrance and loss of

sugar to the blood stream, the liver smooths out the extremes of the changes and thus the concentration of the sugar in the blood remains fairly constant. Without such function not only would there be failure to supply available glucose at the particular time needed, as during severe muscular exertion, but the blood-sugar would decrease to a level incompatible with life. Although it has been definitely established that the liver is the most important agent in the performance of this vital function, the manner of performing it is not known.

The liver not only has to do with the glucose of the body which is ingested in some form of carbohydrate, but it also is responsible for the formation of glucose from protein. Only a part of the protein ingested is used as such; the remaining protein must be utilized in some other form. Most of the latter portion is deaminized, the nitrogenous by-product excreted as urea, and the remainder converted to glucose. The liver is essential for this process and the blood-sugar level is maintained in the absence of available carbohydrate, by making glucose from protein. How the liver performs this act is not known, nor is it known whether or not hepatic activity can convert fat into glucose.

The liver is also of importance in another phase of protein metabolism, that relative to the purines. Another important nitrogenous by-product, besides urea, is uric acid. In some species of animals almost all the nitrogen is excreted as uric acid, while in other species little is excreted in this form. The dog belongs to the latter group. Normally there is only a trace of uric acid in the blood and very little is excreted in the urine. However, after the liver has been removed, uric acid appears in the blood and large amounts are excreted in the urine. If uric acid is injected into the normal dog it is destroyed quickly, but if it is injected in the dehepaticized dog, it remains unchanged in the blood and tissues or is excreted in the urine. These experiments demonstrate that the dehepaticized animal cannot destroy uric acid. What bearing this fact may have in a consideration of the func-

\*From the Division of Experimental Surgery and Pathology, The Mayo Foundation, Rochester, Minnesota. Read before the Minnesota State Medical Association, Duluth, Minnesota, July 1, 1927.

tion of the liver of man cannot as yet be determined, since normally much of the uric acid is not destroyed in the human being. On the other hand, the ability of the dog's liver to destroy uric acid appears to be more easily impaired than any of the other known functions of the organ.

Secretion of bile is the function of greatest interest to most clinicians. In this regard the liver is similar to other organs that produce external secretion. While much is known concerning bile and its secretion, there is certainly much yet to be learned. Bile is secreted more or less continuously but is accelerated in proportion to the activity of the gastro-intestinal tract. The ingestion of food is followed by an increase in the flow of bile, certain foods causing a greater secretion than others. The mechanism which causes an increase in the secretion of bile following the taking of food is not known. There are three main constituents of bile, cholesterol, bile salts and bilirubin. Little is known concerning the origin, function or fate of the cholesterol secreted in the bile. It appears that the bile salts are found in the liver and that their main function has to do with the preparation of fats for digestion. Bile pigment is probably a waste product formed from hemoglobin by the reticuloendothelial cells and excreted by the hepatic cells.

The most interesting clinical symptom associated with the bile-secreting function of the liver is jaundice. While it may not be wholly appropriate to discuss jaundice in relation to the physiology of the liver, it should be noted that the conception of the extrahepatic origin of bile pigment necessarily changes the conception of the mechanism of jaundice, especially that of obstructive jaundice. The former usual conception of the processes involved in the development of jaundice following occlusion of the biliary ducts ascribed to the liver an active part in adding bilirubin to the blood. It was assumed that the hepatic cell made the bile pigment and if the biliary outflow was prevented and the bile was dammed back into the biliary system, it was assumed that the bile pigment accumulated in the hepatic cell until it was reabsorbed into the blood or lymph and bilirubinemia resulted. The knowledge that most of the bile pigment was made outside the liver and that the hepatic cell excreted but did not make it, entirely changes the conception of the mechanism of obstructive jaundice. The he-

patic cell apparently only excretes the biliary pigment. The mechanism of obstructive jaundice, then, is simply the prevention of excretion of the biliary pigment which is formed extrahepatically.

The liver performs many other functions, most of which are but little understood. It should be noted that the liver contains another important group of cells other than the hepatic cells, namely, the stellate cells. These cells belong to the group which is capable of engulfing foreign material and they are important agents in removing foreign particles from the blood which passes through the liver. They also probably are significant in immunity, anaphylaxis, and similar processes.

The clinician, especially the surgeon, is more interested in the biliary tract than in any other portion of the liver, not only because it is so often the site of pathologic processes but because it is possible to treat with considerable success many of the lesions surgically. Besides the mechanism of secreting bile, three other physiologic activities are noteworthy in the biliary outflow system, namely the filling and the emptying of the gallbladder, and the discharge of bile into the intestine. These three processes are so closely related that it is difficult to consider them separately.

The gallbladder fills by virtue of resistance to the discharge of bile into the duodenum. It is believed that the mechanism producing this resistance is due to the tone and peristalsis of the duodenal wall, or to a special sphincteric mechanism around the common bile duct. The preponderance of evidence thus far supports the view that a special sphincteric mechanism is responsible for filling the gallbladder. Of even more interest physiologically than how the gallbladder fills is when it fills and what proportion of bile secreted by the liver enters the gallbladder. Available evidence indicates that the gallbladder fills between digesting periods, but when it becomes well filled with highly concentrated bile, little more bile enters, regardless of the activity of the gastro-intestinal tract. If this is true, it would appear that the amount of bile secreted by the liver and which enters the gallbladder would depend not only on the amount and time of taking food but also on the character of the food.

To some extent the filling of the gallbladder

and the discharge of bile into the intestine must bear a reciprocal relationship. This relationship is, of course, more clearly apparent with regard to the bile in the hepatic duct. As I have stated, the facts concerning the discharge of bile into the intestine are more easily explained on the basis of action of a special sphincteric mechanism around the duodenal end of the common bile duct. Of course it is obvious that changes in the tone of the duodenal wall and peristalsis of the duodenum can affect the discharge of bile through the common bile duct, but such activity will not explain all the known facts concerning the passage of bile into the duodenum. It should be clearly recognized that this special mechanism for regulating the discharge of bile into the duodenum has to do primarily with the filling of the gallbladder and not with its emptying. Furthermore the mechanism is specific for a functioning gallbladder, as animals that normally lack a gallbladder do not possess it.

It is no longer doubted that the gallbladder empties and that it can empty by the contraction of its own intrinsic musculature. Whether or not changes in abdominal pressure, peristalsis of the duodenum and other extraneous factors are of any significance to the normal mechanism of emptying of the gallbladder or are even secondary factors, has not been definitely deter-

mined. At present the evidence is almost wholly in support of the view that the contraction of the muscle in the wall of the gallbladder is the main, if not the only, mechanism involved in the emptying of the gallbladder.

Although considerable is known concerning the physiologic action of the gallbladder, it is not certain that its main functions have been discovered. From the data at hand, the mechanism of the biliary tract can be postulated as follows: Resistance at the duodenal end of the common bile duct causes bile to enter the gallbladder. This resistance is probably due to special sphincteric mechanism. The bile is concentrated in the gallbladder by the absorption of water; whether or not other constituents of bile are absorbed or whether any special substance is excreted by the mucosa of the gallbladder is not known. Following the ingestion of certain kinds of food, particularly certain kinds of fat, the gallbladder expresses its contents by contraction of its own intrinsic musculature.

This exceedingly brief review of the subject has only suggested some phases of the physiology of this great organ and its excretory mechanism. It is obvious that much more must be learned before many of the clinical problems associated with the liver and biliary tract can be solved.

#### BROADCASTING BUNCOMBE

In the not very distant past, the quack and the fadist had the entrée—at advertising rates—to the majority of the newspapers of the country, and thus was made the point of contact between sucker and suckee. Today the majority of newspapers of wide circulation do not cater to the business of the medical fadist or the quack. With that avenue closed, it was but natural that radio advertising should be taken up. Broadcasting in the United States is a commercial venture. Generally speaking, the broadcasting station is out to sell time on the air. It is natural, therefore, that these stations should look with favor on any commercial organization that is willing to pay the price the station asks for puffing its particular line of goods. Thus it is that the radio fans have their ears assailed almost nightly with some pseudomedical fad, or the exploitation of some crude piece of quackery. One of the earliest entrants into this field was

the "Palmer School of Chiropractic," which has its own broadcasting station, WOC, at Davenport, Iowa. Then there is that enterprising quack who specialized on "rejuvenation" operations and who owns and operates KFKB. Station WHT some months ago was broadcasting with great regularity the alleged virtues of a "patent medicine," Salicon. WJAZ, not so long since, was telling the radio world the marvels of that ingenious faker, Professor Scholder. Over KTNT of Muscatine, Iowa, comes the story of the "Tangley Institute," which has a sure-fire cure for varicose veins. WJBT of Chicago has described, via the ether, the marvels and virtues of the magic horse collar, the "I-on-a-co." The Voice of Labor—WCFL—permits Dr. Percy Lemon Clark, of Chicago, to broadcast health misinformation. Over this same station—WCFL—comes also the "Restoro," a base imitation of Wilshire's magic horse collar. (Jour. A. M. A., November 19, 1927, p. 1786.)

## THE PRESENT STATUS OF CHOLECYSTOGRAPHY\*

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IN 1924 when Graham and his co-workers announced their discovery of sodium tetrabromphenolphthalein as a cholecystographic agent, it was generally hailed as better than former methods for roentgenologic diagnosis and was justly received with considerable enthusiasm. Cholecystography has, in my opinion, been one of the most remarkable advances made in medicine during the last decade. It not only provides a method of diagnosing disease of the gallbladder but has made possible a study of its function and physiology as well.

Calcium tetrabromphenolphthalein was the first drug used for cholecystography, but it was soon followed by sodium tetrabromphenolphthalein and sodium tetraiodophenolphthalein. These drugs were administered intravenously until Meenes and Robinson, in 1925, reported a series of cases in which the drug was given orally in capsules hardened in formalin. Since then tetrabromphenolphthalein and tetraiodophenolphthalein have been used orally in variously coated and prepared capsules. At the Mayo Clinic, however, satisfactory results have been obtained by giving either of these salts in plain gelatin capsules.

In 1926 Graham introduced a new drug, sodium phenoltetraiodophthalein, the isomer of sodium tetraiodophenolphthalein, which can be used either orally or intravenously. Its advantages over the drugs previously reported are that it can be given in smaller doses and that it is satisfactory for demonstrating the functions of the gallbladder and liver simultaneously. The principal disadvantage is the expense of the compound. I have used it in a small series of cases both orally and intravenously. Although the cholecystograms were satisfactory they did not seem to possess any advantage over those resulting from tetraiodophenolphthalein given by mouth. Pribram, in July, 1926, recommended iodized atophan (diadophan) as a satisfactory drug for cholecystography. He administered it in cocoa, and claimed that excellent shadows of

the gallbladder were obtained. Later reports, however, are to the effect that grave reactions have followed its use. In December, 1926, Kirklin and Kendall reported the preparation and use of di-iodo-diethyl ether of di-salicyl-phthalein for cholecystography. This drug can be given orally in liquid form, and seems to be free from the reactions, such as nausea, vomiting and purging, which occasionally follow the oral administration of phenol compounds. The resulting cholecystograms are of excellent quality but, owing to further work relative to certain modifications and refinements in the preparation of the drug the supply had not been sufficient so that it could be used as a routine or recommended for general use.

### TECHNIC

The relative merits of the oral and intravenous administration of cholecystographic compounds have been widely discussed. Certain investigators are skeptical with regard to the oral method of administration and insist that all questionable data, such as faint shadows and failure to make the gallbladder visible, should be checked with the intravenous method. While the intravenous method gives assurance that a specified dose will get into the blood, thus avoiding all questions concerning absorption through the intestinal wall, the oral method is generally deemed safer so far as severe reactions are concerned, more facile of application, and hence more practicable. This question can be settled only after a large series of cases has been carefully studied and checked by both methods.

At the Mayo Clinic sodium tetraiodophenolphthalein is given by mouth as a routine. The dose varies from 3 to 5 gm., depending on the weight of the patient. He takes the measured dose in plain gelatin capsules, each containing 0.5 gm. of the salt, and takes it in broken doses immediately after the evening meal, which must be free from fats. He is instructed to drink water freely while taking the capsules and may take water at any time, but must abstain from food until after the sixteenth hour, when he is to

\*From the Section on Roentgenology, Mayo Clinic, Rochester, Minnesota. Read before the Minnesota State Medical Association, Duluth, Minnesota, June 29-July 2, 1927.

eat a meal rich in fats. Roentgenograms are made at the fourteenth, sixteenth and twentieth hours.

#### NORMAL CHOLECYSTOGRAM

The diagnosis of disease of the gallbladder from the cholecystogram is dependent on the following well known factors: (1) absorption of the drug from the intestinal tract, if the oral method is used; (2) excretion of the drug by the liver; (3) patency of the cystic duct; (4) a resistance mechanism at the end of the common bile duct, which causes the gallbladder to fill, and (5) ability of the gallbladder to concentrate the drug.

The normal cholecystogram should show good filling of the gallbladder, good concentration, and a homogeneous density. Slight deformities of contour have not been of significance in my experience. Density and size of the shadow of the gallbladder, as well as its situation, may vary at the fourteenth and sixteenth hour periods, especially the size, which is indicative of elastic walls. The shadow usually shows the greatest density at the sixteenth hour. The gallbladder should be empty or much smaller after a meal rich in fats or egg yolk. The size of the normal gallbladder varies considerably in the fasting state and, unless extremely large or undiminished in size at the twentieth hour, this factor may be ignored.

#### POSITIVE CHOLECYSTOGRAM

The most frequent and reliable cholecystographic sign of cholecytic disease is failure of the gallbladder to cast a shadow in any of the serial roentgenograms. One must be assured, however, that the patient has taken the drug, has not vomited it, has not taken food before the sixteenth hour, and that the films are of good quality and have covered the region of the gallbladder. Failure to secure a shadow by standard technic indicates one or more of the following conditions: (1) occlusion of the cystic duct; (2) contracted or rudimentary gallbladder with obliterated lumen; (3) impaired hepatic excretion of the drug; (4) inability of the gallbladder to concentrate its contents due to marked changes in the mucosa; (5) injury to the mechanism that produces resistance to the discharge of bile into the duodenum; in such case the resistance may not be sufficient to fill the gallbladder normally and the bile as secreted by the liver may pass

directly into the duodenum and the gallbladder fail to receive sufficient of the drug to cast a shadow; (6) congenital absence of the gallbladder or previous cholecystectomy, or (7) failure of the drug to be absorbed when given orally; in such cases, however, the drug can be readily seen in the bowel and if visible in large amounts a second examination should be made.

Persistent faintness of the shadow of the gallbladder is a less common but valuable sign. If a standard technic has been used a faint shadow is caused by defective concentration of the drug due to slight injury to the mucosa of the gallbladder, partial obstruction of the cystic duct, or stones or abnormally thickened bile in the gallbladder. It is most difficult to interpret such shadows, as the personal equation must invariably be considered. Normal concentration has a rather wide latitude, and extreme care must be used in the interpretation of a faint shadow. My experience with the oral method has shown that the shadow must be quite faint on all the cholecystograms and remain so, to justify a diagnosis of cholecytic disease. To determine the dividing line between normal and abnormal concentration is only possible with experience and careful checking with surgical data.

Mottling of the shadow of the gallbladder may be caused by stones and occasionally by papillomas; such mottling should be differentiated carefully from that caused by gas in the bowel. No variation in the size of the shadow indicates lack of normal elasticity and muscle tone. Often a thick-walled or otherwise diseased gallbladder will cast a shadow in the roentgenogram without the aid of dye. Usually the shadow is faint but occasionally it will be as dense as in a normal cholecystogram and will remain constant in size and density throughout the series. For this reason time may occasionally be saved if roentgenograms are made before the dye is administered. If a shadow is unquestionably that of a gallbladder or of a stone cholecystography will not be necessary unless a study of function is desirable.

Gross deformities of the contour of the gallbladder are occasionally confirmed at operation but the roentgenologist is doomed to disappointment if he attempts to diagnose pericholecytic conditions by cholecystography. Gallbladders buried in adhesions will cast shadows with perfectly smooth contours; on the other hand an

irregular contour will appear in an otherwise normal cholecystogram when the gallbladder is found free from adhesions or deformity at operation. Occasionally an hour-glass deformity, incisura, or gross deformity due to adhesions will be confirmed at operation.

At the Mayo Clinic cholecystography has been accurate in cholecytic disease with stones in 98.4 per cent. The invisible gallbladder is the most common and reliable cholecystographic sign, the diagnosis in 95.4 per cent of the cases in this group having been confirmed at operation. Ninety-three per cent of the cases in which a positive diagnosis was made from the cholecystogram were confirmed at operation. On the other hand, only 69 per cent of the cases in which the response was normal were found to be normal at operation. In appraising the accuracy of cholecystography in diagnosis, there must be a standard of what constitutes a diseased gallbladder. A gallbladder which seems to be normal on surgical exploration may prove on microscopic examination to be markedly diseased. A gallbladder containing one or more stones may have normal walls; such a gallbladder usually responds normally to cholecystography, the stones showing as negative shadows. There is a fairly large group of cases in which the gallbladder shows only minor microscopic changes and they respond variably to cholecystography; such cases give definite clinical data pointing to cholecytic disease and a fairly high percentage of patients are relieved after cholecystectomy. It must be remembered that cholecystography is a test of the function of the gallbladder at the time of examination and not a method for de-

picting actual changes due to disease such as is possible in roentgenologic study of the stomach and intestines.

Briefly it may be said that cholecystography, however efficient, should not be expected to bear the entire burden of diagnosis; as in the examination for other diseases, the final opinion should be based on a correlation of all the clinical and laboratory data.

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#### VACCINE TREATMENT FOR INFECTIONS OF UPPER RESPIRATORY TRACT

Upper respiratory infections, acute or chronic, are due to bacterial infection, usually of a mixed type. Various organisms, as the pneumococcus, streptococcus, staphylococcus, influenza bacillus and *Micrococcus catarrhalis*, may be demonstrated as normal inhabitants in the nasopharyngeal secretions of healthy persons. During seasonal variations or epidemics, some particular variety or group may predominate, particularly some type of the pneumococcus or the influenza bacillus. Bacteriologic examination in the upper respiratory infections does not reveal one specific organism as several varieties are present, perhaps some one predominating, depending on circumstances. The

presence or absence of symptoms interpreted as disease depends mainly on the virulence of the infecting organisms present and the resistance of the individual. It is the latter factor that vaccine therapy is supposed to assist. The results of such treatment must be determined by immunity tests or by clinical results. Advocates of vaccine therapy, either autogenous or stock vaccine, are not able to advance laboratory proof that is convincing, but prefer to depend on the clinical data, which are notoriously uncertain. Colds, coryza, upper respiratory infections and the like may respond so promptly to the usual drug therapy or even to no treatment whatever that it is impossible and unfair to make the clinical results a basis of proof for the justification of vaccine therapy. (Jour. A. M. A., November 12, 1927, p. 1713.)

## PRINCIPLES OF SURGERY OF THE GALLBLADDER

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THE dominating condition of the gallbladder requiring surgery is inflammation, be this with or without stones. Especially in the class of cases without stones the proper measuring of the indication for surgical intervention is important. If you compare some very recent editions of continental European text books with the prevalent views in this country you notice a marked difference in the putting of the indications for operation and therefore in the percentage of severe complications found, furthermore in the proportion of malignant disease encountered and of course, as a consequence, in the percentage of operative relief and of mortality.

The old teaching of the symptomless gallstone and that the process of gallstone formation caused no symptoms of itself, and that the disturbances observed were merely due to chronic dyspepsia, kept us for a time from properly sizing up the early symptoms of gallbladder disease. It is true that Langenbuch, who made the first cholecystectomy in 1882, claimed that the bloated feeling, the frequent and disturbing eructations, ill-defined distress and sensitiveness against certain foods were initial symptoms of cholecystitis. But it took many years before these complaints were recognized as strongly pointing to the gallbladder. The indication for operative interference relies in the early stages mostly upon a careful and painstaking history. The little tangible and rather varying symptoms of food distress, bloating and especially distress in the early morning hours grow in their diagnostic importance when they have existed for long years, with or without long intervals. The Cole-Graham *x*-ray examination of the gallbladder became of greatest value in some of the doubtful cases, though the earliest beginning may not produce positive findings.

What are we to do in a case which we have opened in the expectation of finding a cholecystitis and where the gallbladder has a normal appearance, normal color, is perhaps not even tense and is free from adhesions? We look for an enlarged gland at the cystic duct, or for cirrhotic markings of the liver over the gallbladder; they

may be missing. We examine the stomach, the pancreas, the appendix, look for a Meckel's diverticulum, etc. Maybe we find some changes sufficient to explain the symptoms, maybe not. We now have to rely again on the history, which must be very painstaking, and on the *x*-ray findings. This is difficult ground to walk on; here the opinions of surgeons will at times differ. If the history seems really positive, if the symptoms have existed for a long time with or without intervals, it is probably best to take such a gallbladder out, though there was never any definite colicky pain or jaundice. Often you will get a positive culture from the gallbladder wall. The individual experience of the surgeon will be a factor. Perhaps I am on the whole a little too conservative. I feel that on rare occasions I have perhaps taken out a gallbladder unnecessarily, but on the other hand I have been misled several times into leaving a gallbladder in, when it should have come out.

What we have learned of late years is that the cases of cholecystitis without stones and without clear-cut attacks but causing much misery by long continued dyspeptic symptoms, are numerous, can be recognized pretty accurately in most cases by a very exact history and competent roentgen examination and can be relieved of their symptoms in a sufficient number of cases and to a sufficient degree. Of late years the surgeon sees the relative number of operations for stoneless cholecystitis considerably increased. In our last hundred cholecystectomies there were thirty-four without stones.

When the gallbladder is sufficiently incriminated to require surgery, then its excision is the accepted and most satisfactory procedure, unless one has to do with a dilapidated individual where simple drainage of the gallbladder may be preferable. A painstaking examination before operation, observing heart and kidney function and improving it where necessary and feasible, is imperative. Particular attention should be given to proper elimination. The administration of calcium per os in large doses, or preferably intravenously, in prolonged bleeding time is of

greatest value. Far advanced myocardial changes and chronic nephritis are the gravest among the arguments against operation.

When is simple drainage of the gallbladder advisable? In general one can say: when cholecystectomy seems too much of a risk. In old very fat people, in markedly cholemic or septic persons, one does well in making the lesser operation of simple draining. Nevertheless, if the gallbladder is greatly thickened from long standing infection, if abscesses are outside of the gallbladder, one will even in old people often have to take the chance of the excision. Local anesthesia (with or without the addition of some gas or ether) may here be of advantage; but we make it a rule not to use more than four ounces of 0.5 per cent novocain. After the injection of the abdominal walls one has usually used up half of this and we then add, especially in old debilitated people, normal saline solution to reduce the remainder to 0.25 per cent. The parietal peritoneum is injected far to the right from the incision, with the finger in the abdomen controlling the position of the needle point. This allows of free use of retractors. The gallbladder is taken hold of with an instrument or the gauze covered fingers and the area of the cystic duct is injected. Here the solution diffuses readily in the loose tissue and of late we have not always made the deep splanchnic anesthesia between aorta and vena cava, as it did not seem necessary, if we waited a sufficient spell. Thus we removed under local anesthesia the gallbladder of a seventy-three year old lady weighing three hundred and fifty pounds.

Hemorrhage in gallbladder and liver surgery is an important subject. Fortunately by good luck we had no postoperative hemorrhage that required interference in our gallbladder work, which comprises 602 cases. The cystic artery is clamped and tied with ordinary catgut. Dangerous bleeding probably often comes from an untied branch of the cystic artery. It would seem that those who report much trouble from postoperative bleeding from the tied cystic artery made the mistake of draining too widely. If a drainage tube or several such tubes are in direct proximity to the tied vessels, what happens in case of vomiting? The whole intra-abdominal pressure at this moment acts against the lumen or lumina of these tubes. On the other hand, if the abdomen is closed, the relative pressure in

the arteries of the abdomen must be less than normally, because this pressure which worked toward the widely drained wound is now a uniform pressure in the abdomen and works also against the surface of the vessels and their lumina. The general intra-abdominal pressure created by vomiting or straining of any kind has the tendency to force the blood away from the abdominal cavity. The abdominal and thoracic cavities act together in such straining. The blood, arterial and venous, is forced into the extremities and the head. For this reason the face becomes congested. Wherever there is an outlet, the force can act, a hernia will have the tendency to protrude and thus is the condition at the inner opening of rigid drainage tubes. The reason why such marked increase in bile pressure during vomiting was reported in experimental work is undoubtedly that a tube, leading to the outside, was connected with the bile duct. If only collapsible drains are used and the opening for them in the abdominal walls is small, there can be no damage done in the sense of inviting hemorrhage by our drainage.

The cystic duct is tied with a medium sized catgut (twenty-day chromicized is used by us) and then the same thread is thrown around the duct once more. This makes it doubly sure and avoids the possibility of the sutures rolling off. Some surgeons carefully cover the stump with peritoneum. The trouble is that the under surface of the peritoneum is loosely meshed tissue, not well fit for walling off. Covering the stump looks neat but is valueless and rather harmful polypragmasia. It is the best means to keep an

NOTE.—If you take a rubber bulb filled with water and insert through an appropriate opening a rubber tube into its depth, the water will squirt out of the tube when the bulb is compressed. If, instead of the catheter, you use a collapsible soft rubber tube like a Penrose drain, pressure on the bulb will not bring forth any water from the depth because the tube collapses. What water escapes comes from the direct vicinity of the opening. In the case of a soft collapsible abdominal drain with a small corresponding opening in the sutured wound this would mean the escape of what little fluid is near the surface opening; then the neighboring soft parts press toward the wound around the drain, and the depth of the abdominal cavity is under the same physical condition as if the abdomen were closed tightly.

Imagine now that in the bottom or side of our bulb we have a smaller tube enter like a blood vessel and that this tube is tied off just strongly enough to keep it closed against a water pressure from some fountain syringe. If we have a collapsible outlet tube, compression of the bulb will tend to empty backward what fluid was in this artificial artery. In other words vomiting will not invite bleeding from the depth at all. For tied off blood vessels and bile ducts, the only possibility of an unfavorable influence of suddenly increased intra-abdominal pressure would be, apart from a jarring, a sudden change in the shape of the liver, which might become expressed like a sponge; but this does not occur.

Now put the opening of a rigid outlet tube against the smaller tube representing the cystic artery or a bile duct; the counterpressure against the artery opening is removed, and the dangerous difference between atmospheric and peribulbar, that is, intra-abdominal, pressure is brought down to the depth of the tube and acts upon artery and bile ducts.

exudate around the cystic stump in place so that it may cause thickening around, and stricture of, the common duct. As to closure of the sulcus in the liver it is of little importance except in case of oozing of blood. If there should occur a trace of oozing of bile from the raw surface, it is much better that the peritoneum take hold of it at once, especially if the abdomen is closed tightly. The peritoneum is rather lenient towards uninjected bile in minute quantities.

Recently we have been warned not to close the abdomen without some drainage after cholecystectomy. The mishap of bile leakage can of course occur and it is valuable to hear of such incidents, even if they happen rarely. Early recognition of the state of affairs is the only means to save such patients. We have not observed a leakage of bile in any of our undrained cases, but I must admit that I nearly sweat blood when, after closing for the first time a cholecystectomy case tightly, he developed a faint icteric tint on about the sixth day. Nothing further happened and the patient has stayed well now for about seven years. To get an idea of the proportion of our drained and undrained cholecystectomies, the cases operated upon since January 1, 1922, were looked up. There were 218 in all. Of these, seventy-six were drained and 142 were closed tight. In other words, two out of three were closed tightly. Naturally the complicated or seriously infected cases were among the drained ones.

To see what kind of conditions were represented in these two groups, we analyzed the cholecystectomies operated upon since January 1, 1926, and found that

*The abdomen was closed tight without drainage after cholecystectomy in*

	Cases
Cholecystitis without stones.....	32
Gallstone cases (simple).....	23
Gallstones with acute inflammation.....	8
	—
	63

*Drainage after cholecystectomy was instituted in*

	Cases
Cholecystitis without stones.....	2
Gallstone cases (simple).....	13
Gallstones with acute cholecystitis or empyema of gallbladder.....	8
Gallstones and pericholecystitic abscess..	2

Common duct stones.....	3
	—

In one undrained and one drained case a duodenal ulcer was excised and the pyloric sphincter resected at the same session.

As there was no death from leakage of bile in any of our cases, the danger hardly seems great enough to warrant drainage of all cases on account of a possibility which has not occurred so far in approximately 150 undrained cholecystectomies. When there is much difficulty in getting a stone out of the cystic duct, or if there is soiling with infected bile, one surely feels safer with a drain in that wound. To close tight after an operation on the common duct is taking unnecessary chances, inasmuch as a soft collapsible rubber drain does not complicate the wound healing to any extent and adds much to the safety in a doubtful case. We surely do not want to give the impression of being very partial toward closing the abdomen tightly, or of depreciating drainage.

In acute attacks the temperature of the second and third day will inform us whether a simple colic from obstruction of the cystic duct or a cholecystitis of more outspokenly infectious character is before us. If the patient is ready, one can operate most any time after a colic. If the temperature does not come down rather promptly after an attack and if the pain hangs on markedly, then we have either a severely impacted stone with acute inflammatory edema or a more virulent cholecystitis, perhaps even without stones. The leukocyte count will give us the information of the course if examined day by day or even at more frequent intervals. At times a very acute case is sent to the hospital. If the condition does not have the definite earmarks of an acutely perforating case, we delay a couple of hours with our decision. If the pulse and other symptoms then have improved slightly under rest in the hospital, we keep the patient well watched. If the next morning the pain is just as severe, the leukocyte count and the temperature high, we operate. If there is however a tendency to moderation of the symptoms it is better to wait as long as the signs of acute infection show a diminution in severity. The condition may cool off in the course of a week or two and one can then operate with the probability of being able to make a cholecystectomy.

Quite frequently the pancreas is swollen; there is a pancreatitis especially of the head. The close connection of the lymphatics is the reason for this. If there is no fat necrosis in the neighborhood and if the gallbladder disease is in the foreground, the mere swelling of the pancreas head has not very great significance, especially if it is of the lumpy type, *i.e.*, if discrete thickenings, often of the size of marbles, are felt. If the gallbladder is left in, the case will in all probability not be permanently benefited. The gallbladder is therefore best removed and the cystic duct tied. Establishing drainage of the bile has no value, as the pancreatic swelling is in such cases not due to reflux of bile and the bile has free outlet into the gut.

The subject assigned to me was the surgery of the gallbladder only. The primary affections of the deeper ducts are not within the scope of this paper. But I must mention that with the great increase of gallbladder surgery the problem of the sequelæ after operation has loomed up not only as a very important but at the same time as one of the most difficult chapters in abdominal surgery. When much inflammatory thickening exists from stones in the gallbladder, the cystic duct is often greatly shortened and in the presence of a large stone in the neck of the gallbladder it may be quite insignificant. The thickening of the neck of the gallbladder and of the cystic duct may have partly incorporated the hepatic duct into the mass and it can then easily be damaged.

While the routine procedure of removing the gallbladder from the cystic duct outward is the neatest, it is best to start the removal of the gallbladder from without inwards, in any case which does not have a clearly recognizable anatomy. This will greatly help in avoiding injury to the deep ducts. Often even then we do not know how near we are to the common duct. One can get help by splitting the gallbladder on the under surface down toward the duct, or if it is bulky

and unopened one may find it advantageous to clamp it near the infundibulum and cut it away. Then the clamp is loosened after additional protection with gauze, and the proximity of the duct is ascertained. After the exploration of the deeper ducts the necessary trimming away of the gallbladder neck can then be done under better conditions.

Acute perforation of the gallbladder may occur in severe inflammation or from an injury, which is, however, rarely observed. In an injury, as for instance a stab wound, early recognition is the important point. The peritoneum is only moderately damaged by uninjected bile and such extravasation does not need extensive drainage; in fact, in a very fresh injury no draining appears needed. The gallbladder is removed or, if the perforation is small, may be sewed up.

If in a case of acute cholecystitis we find bile in the free abdominal cavity, it is due to one of two conditions. There may be a slough in the gallbladder wall and a readily recognizable hole. The worst destructions of this kind have been, in my experience, in *coli* infections. While in appendicitis perforation is such a common occurrence, in cholecystitis it is a rather rare finding. This difference is due to several factors, among others the arrangement of the blood supply. In cholecystitis the tendency is more toward severe edematous swelling of the peritoneal surface perhaps with some area of necrosis on the mucosa side. There occurs on the other hand in acute cholecystitis a perforation or, if you prefer, a permeation of bile without any recognizable opening. It is probable that it is due at times to rupture of some of Luschka's crypts which happen in some cases to reach far out toward the peritoneum. This form of bile peritonitis is less vicious than the frank perforation.

The operation of cholecystectomy should not be undertaken light-heartedly. It is considerably more serious than an appendectomy. I am prompted to make this remark by a recent sad experience. A non-calculus case with an outspoken gallbladder history died suddenly from pulmonary embolus. Appendix and gallbladder, both pathologic, had been removed. There was no untoward sign; the patient was up in a chair on the sixth day. On the tenth day sudden death came from embolism. This death came after a long stretch of ninety gallbladder opera-

NOTE.—Reports of accidental excision of parts of the main bile channels have become rather frequent in the literature. To get into this kind of trouble is considerably easier than to get safely out of it. Where direct repair is possible, splinting with a rubber tube, leading into the duodenum, gives perhaps the most satisfactory results. However, little is known of the late results. Judd, who has undoubtedly the largest experience of any at his command, writes that even two to four years after operations for injuries to the main bile channels strictures may occur. One such accident, excision of the hepatic duct, we reported in the Twin Cities number of the Surgical Clinic of North America four years ago. Recently this patient, who is now seventy-five years old, wrote us that she is well and has no discomfort. The operation was on Oct. 13, 1921, and therefore dates back five years and eleven months.

tions with only one death, this one also from pulmonary embolism. When Waltman Walters published some months ago his remarkable results in averting postoperative embolism by the internal administration of two grains of thyroid three times a day, we prescribed this medication as a standing order for all our gallbladder cases. The case reported above had had this treatment. Pulmonary embolism is much dreaded in gallbladder surgery.

Among the 302 cholecystectomies since Jan. 1, 1920, there were eleven deaths; three from pulmonary embolism, one from ileo-femoral embolism, two from septic liver shock in peracute infections, one from influenza during the epidemic, one from angina pectoris three weeks after operation, one from gradual exhaustion in carcinoma of the common duct with stones in the gallbladder and common duct, one from myocarditis and old age, and finally one from coli bacteriemia in a diabetic lady, seventy-seven years

old, with calculous cholecystitis and large pericholecystitic abscess.

There remains to be mentioned the carcinoma of the gallbladder. When seen early, carcinoma is usually an accidental finding. The cases of fundus carcinoma, when not too far advanced, are operable. We have twice operated in rather advanced cases; making extensive resections into the liver. In one instance pelvic metastases later developed, and in the other, where, on account of a cholecystostomy many years previously, the gallbladder was adherent to the abdominal walls, local recurrence was noticed after one year. In both cases a long-standing infection of the gallbladder *with stones* had apparently been the inciting cause. In carcinoma of the gallbladder, as it appears from the literature, gallstones were found in almost every instance—another strong argument against the so-called harmless gallstone, which term ought to have only historical interest.

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## ACUTE SILENT INFECTION OF THE MAXILLARY SINUS IN RELATION TO ACUTE SYSTEMIC DISEASES\*

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THE occasion of this report from a medical service was the observation of a series of cases of empyema of the maxillary sinus without local pain, in which remote systemic disease was a prominent source of symptoms. Not only did the findings of empyema of the maxillary sinus often cause surprise, but it re-emphasized interest in the relationship of acute sinus infection to acute as well as chronic systemic disease. While focal infection is often thought to be the basis for the production of chronic systemic disease such as glomerulonephritis, arthritis, or bronchitis, the mode or time of infection often remains obscure or defies demonstration.

That acute empyema of the maxillary sinus may be silent as to pain has been emphasized repeatedly. As an instance, Burnap<sup>1</sup> stated that a very small percentage of antral infections is diagnosed early and that part or all of the clinical symptoms may be absent. Particularly in children has the prevalence of unexpected paranasal sinus infection been emphasized by Huenekens<sup>2</sup>; recently Cone<sup>3</sup> at Iowa University reported a high percentage of paranasal sinus disease, the successful treatment of which alleviated various systemic diseases. Marriott<sup>4</sup> and Clau-  
sen<sup>5</sup> have emphasized empyema of the maxillary sinus as causative of parenchymatous nephritis in children. Pritchard<sup>6</sup> has emphasized the relationship between upper and lower respiratory tract disease.

While it is recognized that acute antrum infection may be unassociated with localizing symptoms, particularly in children, clinical experience has led us in the past to expect local pain; it is thus expressed in a recent symposium discussion in the International Medical Digest, "As a general rule acute inflammation of a sinus is characterized by neuralgic pain in the affected cavity."

It is to call attention to the variation from such a general rule that the following series is reported with emphasis upon the relationship to

acute and chronic systemic disease, and to speculate upon the sequelæ of neglected empyema of the maxillary sinuses. No attempt is made to discuss the special features of diagnosis or treatment which were carried on properly under the supervision of the nose and throat service.†

### CLINICAL DATA

The cases were all adult students, aged 17 to 25 years, and represent only a small percentage of the total number under observation for treatment of respiratory tract infection. The series represents about one-third of the total number diagnosed and treated for empyema of the maxillary sinus. In all, forty-six cases were reported to have maxillary sinusitis and were treated on the nose and throat service. Those cases in which a diagnosis of acute antral infection was made but in which irrigation was not done are not included in the report. With one exception all occurred during the current school year. In all cases reported, pus was irrigated from the antrum.

It is seen that the usual symptoms were headache, malaise, nasal discharge, and cough, more often than not of a few days duration, which symptoms had a tendency to hang on longer than the usual head cold. The headache was neither localized nor extremely severe, rather similar to that often seen with any type of acute infection. Most often the history of the infection suggested rhinitis followed by empyema of the antrum. However, at least one case suggested primary invasion of the antrum. Fever to 100° was present and recorded in three cases; leukocytosis was inconstant. Bacteriological examination was not attempted. Special examination of the nasal sinuses by transillumination and x-ray was requested at first more as an elimination procedure where the fever was higher or duration of rhinitis or cough seemed longer than usual. The finding of empyema of the antrum was sometimes a surprise but only emphasized the fact

\*Presented before the Minnesota Society of Internal Medicine, June 6, 1927. From the Students' Health Service, University of Minnesota.

†Thanks are due to Drs. George McGahey and Walter Fink for their co-operation and permission to review their records.

Case and Sex	Symptoms		Physical Examination	Antra		Laboratory		Complications or associated disease
	Description	Duration		X-ray	Intractions	Urinalysis	Leukocytes	
1. L.H. M 20	Headache Chills Fever Cough	Six days	T - 100° p 80 Pharynx reddened Chest essentially negative Occasional sibilant rales.	Cloudiness bilateral	Both 3	Trace albumin once	7500	0
2. E.D. M 21	Headache Chills Backache	Three days	Pharynx reddened Occasional mucous rales	Cloudiness bilateral	Both 1 left 4 right	0	7900	Bronchitis
3. H.B. M 21	Weakness Sore throat Hoarseness Head cold Cough	One week	Pharynx reddened Cervical glands enlarged Few rales over bronchi	Cloudiness frontal sinuses and left antrum	3	0		Bronchitis
4. C.P. M 23	Cough and wheezy respiration History of asthmatic attacks	One week	T 99° to 101° p 100 Injection of nasopharynx Sibilant rales	Cloudiness bilateral	Both 5	0	7100	Aggravation of symptoms of asthmatic bronchitis
5. L.M. F 17	Weakness Cough	Six days	Numerous medium rales at right base	Cloudiness left antrum Bronchiectasis right base(chest)	Left 1	0		Possibly pulmonary signs secondary to antrum. Three months later chest clear
6. J.E. M 23	Headache Malaise Head cold	Two weeks	T - 100° Raes over bronchi	Cloudiness right	Right 2	0	12200	Acute bronchitis
7. A.S. M 20	Headache Chills, fever Malaise Slight cough Nasal secretion	Two days	Pharynx reddened Raes sibilant	Cloudiness bilateral	10 right	0	8500 11200	Acute bronchitis
8. H.W. M 23	Slight headache Swollen ankles Head cold	Two weeks	Slight edema of ankles Blood pressure 144/88	Cloudiness left	Both 3	1018, alb.2+ Sugar - Hyaline & granular casts White & red blood cells P.S.P. and blood metabolites normal		Diffuse glomerulonephritis
9. B.S. M 24	Headache Slight cough	One day	Slight injection of throat Cervical adenopathy	Cloudiness right	10 right	Trace albumin once	7500	0
10. R.H. M 25	Malaise Headache Chills Cough	One week	Slight injection of nasopharynx	Cloudiness bilateral	Both 3	0	6700	0
11. H.M. M	Head cold	Five days	Injection of nasopharynx	Cloudiness bilateral	Both 6	-	-	0
12. S.D. M	Discharge from nostril		Injection and secretion	Cloudiness right	3 right	-	-	0
13. E.W. F	Cough Moderate nasal secretion	One month	Injection of nasopharynx	Cloudiness bilateral	Both 1	-	-	0
14. R.L. M	Head cold Slight cough	Thirteen days	Injection of nasopharynx	Cloudiness right	1 right	-	-	0
15. H.J. M	Head cold	Ten days	Injection of nasopharynx Purulent secretion	Cloudiness right	4 right	-	-	0

Fig. 1. Chief clinical data on fifteen cases of acute empyema of the maxillary sinus.

that the examination of the patient with acute respiratory tract disease is incomplete without examination of the accessory sinuses for pus accumulation.

Associated bronchitis was considered present in those patients with cough and with râles heard over the bronchi; cough was present in practically all. In one patient localized signs at the right base indicated bronchopneumonia. In this instance, considering the history and the minimal degree of sinus infection it is thought impossible definitely to relate the two processes. Three months later these pulmonary signs had essentially disappeared.

Special attention has not been given to cervical adenopathy in this study, but attention should be called to the fact that, according to Most,<sup>7</sup> the lymphatic drainage of the nasal sinuses is through the retropharyngeal glands to the deep cervical nodes underlying the sternomastoid muscle.

#### DISCUSSION

Most interesting is the history of patient H. B. who appeared with slight headache and swelling of the ankles and in whom a head cold had existed for two weeks. Complete examination revealed a very definite empyema of the antrum and evidence of acute diffuse glomerulonephritis including edema, slight hypertension, albumin, and casts and red blood cells in the urinary sediment. Following irrigation of the right maxillary sinus extending over a period of three weeks, the urinary findings and edema subsided; one year later the patient's physical examination was normal.

The occurrence of bronchitis and nephritis following acute concealed maxillary sinus infection illustrates one possible mode of onset of chronic disease. If, in the acute process, there exists at times this definite sequence of acute systemic disease, its subsequent chronicity may start in the neglected acute focus. Certainly the chronic localized process or focus has had its antecedent acute stage and clinical observation suggests that the chronic systemic disease follows the continuous infection from such a focus. The occurrence of a protracted head cold due to a silent infection readily escapes the patient's memory and, becoming chronic, causes little if any additional signs. The empyema may have a tendency to heal and leave no trace of its sig-

nificance in the production of remote chronic disease. In all cases of acute maxillary sinusitis here described, remote effects have been the outstanding source of symptoms, if bronchitis is to be considered remote.

No attempt is made to speak in terms of absolute proof that the acute maxillary sinus infection here described has caused the acute systemic disease. Attention is called to the sequence of events from history and examination. Such sequence suggests a causal relationship and forms the logical basis for successful treatment.

New respect is attached to the so-called rhinitis that does not readily clear up; the routine medical examination should be detailed enough to rule out cloudiness of the antra. Increased coöperation becomes essential between internist and head specialist as well as a deeper appreciation of the fact that pathology often does not confine itself to one single region and that the human body must be viewed in its entirety.

#### SUMMARY

1. In a total series of forty-six cases with empyema of the maxillary sinus, local pain was lacking in 15.
2. In seven cases, there was associated acute systemic disease, including bronchitis 5, bronchopneumonia 1, and acute glomerulonephritis 1.
3. Oversight of acute empyema of the maxillary sinus represents one possible source from which acute systemic disease may become chronic through neglect in treatment.
4. Special examination of the nasal accessory sinuses should be made in all patients with acute respiratory tract or systemic infection of doubtful or unknown origin.

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## A CONSIDERATION OF CERTAIN ASPECTS OF VERTIGO FROM AN OPHTHALMOLOGICAL STANDPOINT\*

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A PERSON of middle age has come to you for the alleviation of his condition. His story, no doubt, is a familiar one. "Doctor, I have been well practically my whole life. Of course I have been treated for minor illnesses, but now of late I have felt dizzy. At times I feel nauseated; at times feel faint; and occasionally if I do not grasp a stationary object, I feel as if I might fall. Again there may be an intermittent period of time when I feel fairly well. These attacks usually come on suddenly, apparently without cause and are aggravated by sudden movements of my body and by fatigue. They are lessened if I lie down and am quiet. I can do my work fairly well, but recently these attacks have been getting worse, which naturally decreases my efficiency, both mentally and physically. I have been given much advice and a variety of medications, and the fact that I am here renders clear the answer to their efficiency." Our patient represents a relatively common type seen from time to time in the practice of medical science. There has been a tendency to regard this type with vague indefinite sensations of dizziness as a definite newly acquired disease in the incipient stage. The general physical examination with detailed neurological and laboratory examinations has usually failed to disclose evidence of serious disease. The treatment has mainly been that of prophylactic measures.

Vertigo, then, is a symptom, a manifestation of some underlying and often obscure condition. The word, vertigo, is a derivative of the Latin, "vertere," meaning to turn. The definition might be stated as "any movement or sense of movement, either in the individual himself or in external objects, that involves a real or seeming defect in the equilibrium of the body, and is associated with more or less disturbance of consciousness." The etiology of this symptom, popularly known as dizziness, depends upon a disturbance of the sense of equilibrium. The co-ordinated action of various groups of muscles maintains this equilibrium of the body, and the

mechanism of nervous control for this action is situated in the cerebellum. The sensory or afferent impulses are transmitted to the cerebellar centers from the eyes, semicircular canals, muscles, joints, skin, or any other part of the body that may come in contact with external objects. Due to the cerebellar connections with motor centers of the cerebral hemispheres, these sensory impressions determine the amount of motor impulses necessary to cause muscular contraction insuring the state of perfect balance or equilibrium. The manifestation of vertigo, then, would occur if there was a disturbance in the transmission or reception of these motor impulses going to the cerebellum. The correct interpretation can only be arrived at by considering all the possibilities in a thorough systematic manner, and the relationship of other symptoms and clinical findings.

The oculist and aurist often encounter the symptom of vertigo. A vastly increasing number of people are learning to associate it with disorders of these complex organs of the special senses. As the number of referred cases decreases with the higher education of the masses who select their own specialist, the danger of overlooking the essential etiology increases and the inter-relationship of ophthalmology, otolaryngology, and internal medicine becomes more and more important. Situated as I am in a group representing the various phases of medical practice, this inter-relationship was the factor that determined my observations of certain aspects of vertigo from an ophthalmological standpoint.

A survey of 6,000 cases from our records was made from the standpoint of the patients' symptoms, the basis for seeking relief. In classifying these symptoms, we did not include those elicited on questioning, but only those volunteered by the patients as their chief complaint. The vertiginous condition, we found, was the basis for seeking medical aid in approximately 2 per cent of these 6,000 cases. We then carried our studies further from another viewpoint. Of these 6,000

\*Read before the annual meeting of the Minnesota State Medical Association, Duluth, Minn., June 30 to July 2, 1927.

cases, 1,600 refractions were performed. An analysis of the cases refracted revealed two general observations: (1) about 30 per cent of the refractions were recommended upon the findings of the routine physical examination, thus including the class who thought their eyes were normal; (2) the remaining 70 per cent came directly to the ophthalmologist for relief of symptoms referable to the eyes. A study was made of these 1,600 refractions and the symptoms for the relief of which these patients were refracted were classified. The symptoms are familiar as those generally associated with disturbance of the refractive media of the eye, *i.e.*, headache, blurred vision, epiphora, asthenopia, presbyopic changes, difficulty in distant vision, vertigo, blepharitis marginalis, strabismus, and correction of aphakia produced by cataract extraction. In classifying these symptoms as to their predominance, we counted the total number of times each was presented either as the only symptom for relief, or in combination with the other symptoms. This resulted in the following table:

<i>Complaint</i>	<i>Percentage</i>
Headache .....	33
Blurred Vision .....	32
Epiphora .....	3
Asthenopia .....	30
Presbyopic Changes .....	24
Difficulty in Distant Vision.....	8
Blepharitis Marginalis .....	1.6
Strabismus .....	2
Correction of aphakia .....	0.3
Vertigo .....	4.4

From this summary, headache, blurred vision, asthenopia, and presbyopic changes are outstanding symptoms, in contrast to the low percentage of vertigo (4.4 per cent of the 1,600 cases).

Vertigo has been presented as a general condition the internist is often called upon to treat. In our series, 2 per cent claimed this as their chief symptom. Textbooks and the literature tell us that vertigo is another widespread symptom for the relief of which the patient often visits the ophthalmologist. Thus both the internist and oculist are called upon to determine whether the vertiginous condition is caused by a general condition, or can be attributed to disturbance of the special senses. Some 4.4 per cent of all the cases refracted coming under the observation of our institution, were treated by

the ophthalmologist for their vertiginous condition. Two per cent of these patients complaining of vertigo came to the oculist directly on their own self-made diagnosis, while the remaining 2.4 per cent came to the internist for relief. The 2 per cent who came directly did not have true vertigo, but complained of transient attacks of "dizziness" which we found were due usually to hypermetropia or a transient diplopia due to weakness of convergence. The vertigo of the remaining 2.4 per cent was of a different type. The people had selected the internist for relief (1) because of the severity and persistency of their symptoms; (2) repeated non-successful treatments from other internists; (3) they felt their special senses could not be the cause. The final analysis as the result of thorough physical examination from every standpoint revealed that these people were suffering from a visual disorder causing their vertigo. Thus the importance of this class of patients consisting of 2.4 per cent of 1,600 refractions was evident.

An analysis of this class led to the following observations:

1. Vertigo was their only major complaint, designated usually as an indefinite sensation of dizziness without any rotary or tumbling character, and as either constant or vague in occurrence.
2. All these patients believed their eyes were normal, and it was difficult at times to impress them with the fact that their refractive apparatus was the defective and causative factor.
3. The symptoms varied from: (a) Vomiting spells with vertigo, especially on moving the head quickly, followed by faintness; (b) tendency to fall, which is persistent; (c) inability to concentrate and balance when walking; (d) dizziness in bending over, especially if fatigued; and (e) constant dizziness, increasing the last few years.
4. The duration of the vertigo varied from two weeks to six years.
5. Practically every walk of life was included in the list.
6. The age period between 30 and 40 predominated.
7. The ratio was fairly evenly divided between sexes.
8. The patients had all been recommended treatment of the same type in the past: (a) rest in bed with temporary relief always; (b) free

purgation with various medicinal agents; (c) tonics of every variety; (d) the usual recommendation for individuals with neurotic and unstable personalities; (e) removal of foci of infection.

9. With only few exceptions, all the patients were robust, healthy individuals whose pride in their well-being had been injured by the presence of this disturbing symptom.

10. The cause was found to be a refractive error, usually of small denomination, and astigmatic. The ear, nose and throat examination in all cases was negative.

11. The final cure of this class consisted of the correct prescribing and fitting of glasses.

In order to treat successfully any condition, the knowledge of the underlying pathology is fundamental. Symptoms referable to the eye present themselves in valuable and interesting forms in many general affections. Great stress has been placed by some upon a condition of heterophoria. Our study has revealed that errors of refraction and accommodation are of much greater importance. The clinical facts established in our study of these vertiginous cases were interesting and illuminating. The subjective test with the Snellen letters revealed in practically all cases 6/6 or 20/20 vision; the natural balance of the ocular muscles was within normal limits; and the range of accommodation was normal in respect to the various ages of the patients. The ophthalmoscopic examination in all cases was essentially negative. The main objective finding in all cases was a hyperopic astigmatism as found by the retinoscopic examination. The characteristics of this finding were:

1. The amount present varied from +.25 to +1.00 diopters, the most prevalent defect being between +.25 and +.50.

2. The amount present was usually the same in both eyes.

3. Most important as to the causation of the symptom was the fact that the axis of the astigmatism was (a) usually in the oblique meridians, (b) usually astigmatism against the rule; and (c) a different axis in each eye.

We know that true vertigo depends mainly upon an interference with the afferent impulses from the semicircular canals or from the eyes. Our only positive finding in these cases was this hyperopic astigmatism of varying degrees and axes. The causation of vertigo in this class of

people must have been these astigmatic errors, for the prescription and fitting of proper glasses relieved the condition.

The actual mechanism of vertigo from this source is speculative. Under normal conditions, an image of an object viewed is impressed on each retina. This is performed by the complex mechanisms of the accommodative and refractive agencies. Binocular single vision implies the union into one single conscious impression of the two separate images. This fusion is analogous to the perception of sound. We do not wonder why we do not hear double because a sound is perceived separately by each ear. Naturally, in order that the fusion of visual images be physiologically perfect, the two images from each eye must be identical, as brought forth by the theory of identical points. Any variance from this standard would call forth upon that particular eye added effort to make the image perfect. If that were not possible, the fusion center would attempt to correct the dissimilarity, or entirely disregard the less perfect image and accept the other, as for example in many cases of anisometropia and antimetropia. Thus when images of two unlike objects are thrown simultaneously one on each retina, the mind is presented with two different sensations, and we then have what is called the struggle of the visual fields. It is this struggle to promote fusion which may be the underlying basis for the causation of this type of vertigo. We know that if vertical lines are seen by one eye and horizontal lines by the other, there is no genuine fusion into a fixed and constant picture. We will see only one field at the time, alternately; or the field is broken. In our cases we found as a characteristic this astigmatic error usually at a different axis in each eye. The fusion center in this type of case would not disregard one of the images for the vision we found to be subjectively normal, but would try to fuse them. Each individual eye would first try to correct the defect by accommodative effort and thus present a normal image to the fusion center, but in our series of cases all our patients were at or near the age when presbyopic changes take place, with the natural deterioration of accommodative power. Thus this struggle of visual fields would occur in the attempt at fusion of the two images, and this, due to the resultant incompatibility, would give rise to confusion in the eyes. Ocular

impressions correct the false sensations from the muscles in the maintenance of equilibrium, and thus in turn, if our ocular impressions are confused, they would increase the falsity of the afferent or sensory impulses to the cerebellar centers. One can then surmise that this interference would lead to this vertiginous condition.

A follow-up investigation was recently made to determine the efficacy of the treatment instituted. Ninety per cent claimed absolute relief from their distressing symptom, while the remaining 10 per cent reported varying degrees of partial relief. All were benefited.

My purpose is not to present to you the well established fact that vertigo can be caused by

errors of refraction, but to further this view with a consideration from a different viewpoint. According to our statistics the percentage of people who suffer from true vertigo, as compared to those with subjective symptoms referred to the eyes, is small. The significance lies just in that fact. That percentage wants to be recognized. Fifty per cent of our cases refracted suffering from this condition appealed to the internist first for aid. That is a significant fact, and a splendid argument for more interrelationship between internist and ophthalmologist. The oculist must also recognize this definite syndrome as one that is intimately connected with his field.

#### SCARLET FEVER ANTITOXIN

The advantages of giving commercial scarlet fever antitoxin are necessarily dependent on the accuracy of standardization of the preparation and its use in adequate dosage. The chief advantage of giving commercial scarlet fever antitoxin as a preventive is that the administration of 100,000 neutralizing units prevents the development of clinical scarlet fever in a susceptible person already infected with scarlet fever streptococci but not yet sick. This protection is transient, and, as soon as the antitoxin is eliminated from the body, the individual may again become susceptible to scarlet fever and should be more permanently protected by active immunization with graduated doses of the toxin. The advantages of giving scarlet fever antitoxin are: 1. If an adequate dose is given, the toxin in the patient's body is neutralized and death from toxemia is prevented. 2. If the antitoxin is given early, both the incidence and the severity of complications are reduced. 3. As a rule, patients who receive scarlet fever antitoxin early in the disease get rid of the scarlet fever streptococci

sooner than those who do not receive the antitoxin. (Jour. A. M. A., November 5, 1927, p. 1625.)

#### THE MEDICAL PROFESSION AND COSMETICS

The American Druggist, which, according to newspaper reports, has been added to the series of publications owned and controlled by the International Publications, Inc., of which William Randolph Hearst is president, contains an article by one Alice (Hyphen) Esther Garvin, who apparently has developed the quaint notion that the American Medical Association is endeavoring to secure legislation which will make it necessary for druggists to sell cosmetic preparations only on prescription. This extravagant straw man the lady then devastates with ridicule. The American Medical Association is holding strictly to its policy of protection of the public in all matters related to health, asking only that the presence of dangerous ingredients in the few cosmetic preparations that contain them be so indicated as to give the public the opportunity of knowing what risks it may run in using them. (Jour. A. M. A., November 19, 1927, p. 1787.)

# HOSPITAL OBSTETRICAL RECORDS OVER A SIX YEAR PERIOD

GERALD P. DUNNE, M.D., C. M. (McGILL)  
Saint Paul

**A**N analysis is presented of 1,992 consecutive private and dispensary patients delivered by the obstetrical staff of The Charles T. Miller Hospital, Saint Paul, during the period December 20, 1920, to December 31, 1926.

The average hospitalization was eleven days. Nearly all the dispensary patients were primiparae who had received prenatal care at The Amherst H. Wilder Dispensary. They were delivered by internes under supervision of the associates of the department head.

Eighty-seven per cent of the labors were attended by men limiting themselves to obstetrics and gynecology; 13 per cent by general practitioners.

TABLE I-A

	LABORS		Fetal Deaths	Maternal Deaths
Spont.	1344	1359	50-3.6%	1
Oper.	648	663	34-5 %	3
Totals	1992	2022	84-4.1%	4 (.002)
67 Stillbirths				
17 Postpartum (fetal) deaths (12 days).				
84 Total Fetal Deaths				4.1%

TABLE I-B

	LABORS		% Operative term cases 608 to total term cases	
1852			32.1%	
% Operative premature cases 46 to total premature cases 140.			32.8%	
% Total operative cases 654 to total cases 1992.			38.8%	

TABLE II

	SPONTANEOUS LABORS		Fetal Deaths	Maternal Deaths
Term: Primip.	454		5	0
Multip.	788	1242	10	0
Prem.: Primip.	51		10	0
Multip.	36	87	23	1
Multiple Preg. (twins)	15	30	2	0
Totals	1344	1359	50	1
50 Fetal Deaths-3% (59/1% of total F. D.)				

TABLE III  
OPERATIVE LABORS

	Births	Fetal Deaths	Maternal Deaths
Term: Primip.	418	10	0
Multip.	176	5	3
Prem.: Primip.	20	6	0
Multip.	19	3	0
Multiple Preg. (twins)	15	10	0
Totals	648	663	34
34 Fetal Deaths-5.1% (40/1% of total F. D.)			

TABLE IV  
ABORTIONS

	Trimesters		
	First	Second	
Complete	20	21	27.3%
Incomplete	87	12	66.1%
Therapeutic	7	3	6.6%
Totals	114	36	
Maternal Mortality		1	0.06%
(Pelvic Abscess and Tbc. Peritonitis)			
% Operative to total Abortions			72.6 %
1 (abortion); 13.3 (deliveries)			

TABLE V  
PRESENTATIONS AND POSITIONS

Positions recorded				1941
Not recorded				81
Total				2022
<i>Verte:</i>	1867	96 %	<i>Breech:</i>	68 3.5%
L O A	1309	70 %	Full	38 55 %
R O A	308	16 %	Frank	20 29 %
R O P	220	11 %	Footling	10 14 %
L O P	12	.6%		
Brow	15	.7%		
Face	3	.1%	<i>Transverse:</i>	6 .5%

TABLE VI  
OPERATIVE DELIVERY METHODS

Total	648	Methods used	699
Methods:			
Cesarean	60	3	5 %
Forceps	502	10	1.9%
Breech Extraction	61	7	11.4%
Version & Extraction	20	4	20 %
Inductions	54	8	14.8%
Craniotomy	2	2	100 %

TABLE VII

FORCEPS

	Fetal Deaths	Maternal Deaths
<i>Primipara:</i>		
High: Tarnier	16	
Keilland	40	5
Mid	89	1
Low	238	0
<i>Multipara:</i>		
High: Tarnier	10	
Keilland	34	1
Mid	13	0
Low	59	3
TOTALS	499	11
Fetal Mortality		2 %
Maternal Mortality		.19%
3° Lacerations (34)		6.7 %

TABLE VIII

FORCEPS (INDICATIONS)

Uterine Inertia	125	24 %
Posterior Position	114	22 %
Forceps Control	93	18 %
Contracted Pelvis	59	11 %
Fetal Distress	50	9 %
Maternal Distress	37	7 %
Non-rotation	23	4 %
Heart Disease	7	1.3%

FORCEPS (INDICATIONS) (Cont'd)	
Aftercoming Head.....	6 1.1%
Brow.....	6 1.1%
Eclampsia.....	5 .9%
Pendulous Abdomen.....	5 .9%
Prominent Ischial Spines.....	5 .9%
Previous Cesarean.....	4 .7%
Following Hysterotomy.....	4 .7%
Prolapse Cord (Vertex).....	3 .5%
First Twin.....	3 .5%
Second Twin.....	1 .1%
Both Twins.....	3 .5%
Diastasis Recti.....	1 .1%
Placenta Previa.....	1 .1%
Ventro-fixation, Uterus.....	1 .1%

TABLE IX  
INDUCTIONS

Total	54
<i>Methods:</i>	
Voorhees' Bag.....	41
Rupture Membranes.....	5
Oil, Quinine and Pituitrin.....	7
Bougies.....	4
Followed by Cesarean.....	1
Followed by Version.....	3
<i>Results:</i>	
Born Alive.....	47 87%
Fetal Mortality:	
Stillborn Premature.....	3 5%
Stillborn Term.....	4 7%
Abortion.....	1 1%

TABLE X  
INDUCTION INDICATIONS

Contracted Pelvis.....	11 20%
Placenta Previa.....	10 18%
Overterm.....	7 12%
Pre-eclampsia.....	7 12%
Nephritis.....	6 11%
Hydramnios.....	4 7%
Large Head.....	3 5%
Occiput Posterior.....	2 3%
Cardiac Disease.....	2 3%
Pyelitis.....	2 3%
Hyperemesis Gravidarum.....	1 1%
Hypertension.....	1 1%
Rigid Cervix.....	1 1%
Tuberculosis.....	1 1%
Premature Rupture, Membranes.....	1 1%

TABLE XI  
CESAREANS

Total	60
Transperitoneal.....	1
Classical.....	31
Extraperitoneal.....	27
Porro.....	1
Maternal Mortality.....	0
Fetal Mortality.....	3 5 %
Puerperal Infection.....	4 6.6%
Wound Infection.....	11 18 %
<i>Indications:</i>	
Contracted Pelvis (Anatomic and Relative).....	53
Toxemia.....	3
Failure of Forceps.....	3
Brow.....	1
Placenta Previa.....	2

TABLE XII  
VERSION AND EXTRACTION

Total.....	20	Fetal Mortality.....	4	20%
<i>Indications:</i>				
Transverse.....	6			
Multiple Pregnancy.....	5			
Failure of Forceps.....	2			
Placenta Previa.....	2			
Brow.....	2			
Following Induction.....	3			

TABLE XIII-A

## ANTEPARTUM HEMORRHAGES

<i>Placenta Previa:</i>	
Multipara.....	10
Primipara.....	8
Live Births.....	14 78 %
Fetal Mortality.....	4 22 %
Maternal Mortality.....	1 5.5%
(Postpartum convulsions—48 hours)	
<i>Treatment:</i>	
Spontaneous Deliveries.....	5
Voorhees' Bag.....	6
Forceps.....	3
Version.....	2
Cesarean.....	2

TABLE XIII-B

## ANTEPARTUM HEMORRHAGES

<i>Abruptio Placentae:</i>	
Multipara.....	2
Primipara.....	3
Live Births.....	2 40 %
Fetal Mortality.....	3 60 %
<i>Treatment:</i>	
Spontaneous Deliveries.....	2
Voorhees' Bag.....	1
Quinine and Pituitrin.....	2

TABLE XIV

## POSTPARTUM HEMORRHAGE

Total 22 (1922 deliveries)—1.1%	
Maternal Deaths.....	0
Maternal Morbidity.....	2 9 %
<i>Causes:</i>	
Atony.....	19 63 %
Adherent Placenta.....	4 13 %
Placenta Previa.....	2 6 %
Lacerated Cervix.....	3 10 %
Duncan Separation.....	2 6 %
<i>Treatment:</i>	
Massage, Ergot and Pituitrin.....	13
Saline.....	8
Pack.....	3
Crede.....	7
Manual Removal.....	4
Cervical Repair.....	1

TABLE XV

## HYPEREMESIS GRAVIDARUM

Primipara.....	10	Multipara.....	15	TOTAL.....	25
<i>End Results:</i>					
Spontaneous Term.....					10
Premature.....					2
Forceps.....					1
Failed to Return.....					3
<i>Fetal Deaths:</i>					
Abortions.....					3
Hysterotomy.....					3
Miscarriage.....					3
<i>Treatment:</i>					
Therapeutic Abortion.....					3
Abdominal Hysterotomy and Sterilization.....					1
Vaginal Hysterotomy and Curettage.....					2
Glucose and Sedatives.....					23
Whole Blood Injection, Subcutaneous, 30-50 c.c.....					3

TABLE XVI

## TOXEMIA OF PREGNANCY

Total Labors.....			1992
Fetal Deaths.....			84
Maternal Deaths.....			4
% to F. D. Deaths			
Pre-eclampsia			
Primipara.....	6		
Multipara.....	7		
13—.65%	2	2.3%	0
6.5:1000	15%		

## TOXEMIA OF PREGNANCY

		Fetal Deaths	% to Total F.D.	Maternal Deaths	
Eclampsia					
Primipara	4				
Multipara	8				
		12—	.65%	8—	9.5% 1†
			6.5:1000		53%*
Nephritic Toxemia					
Primipara	29				
Multipara	24				
		53—	2.66%	21—	25% 1‡
			26.6:1000		39%
TOTALS		78—	3.9%	31—	36.8% 2—50% of total
					39.7%

\*3 Extra Children

†Postpartum 48 hrs., Convulsions, Plac. Previa

‡Cerebral Hemorrhage, undelivered at 6 mos.

TABLE XVII-A

## PUERPERAL INFECTIONS AND MORBIDITY

Total Labors	1992	
Total Febrile Cases	196	9.8%
Puerperal Septicemia	34	1.7%
Puerperal Morbidity	96	4.3%
Causes other than Puerperal	66	3.8%
Maternal Deaths	0	

TABLE XVII-B

## PUERPERAL INFECTIONS AND MORBIDITY

PUERPERAL SEPTICEMIA:		
Spontaneous Deliveries	12	
Operative Deliveries	17	
Cesarean Sections	4	
Induction (Bag) (Placenta Previa)	1	
	34	1.7%

## NON-PUERPERAL CAUSES:

## Respiratory:

Otitis Media, unilateral	1
Otitis Media, bilateral	2
Bronchitis	10
Influenza	2
Sinusitis	2
Broncho-pneumonia	1
	18
	27 %

## Urinary:

Pyelitis	13
Cystitis	5
Urethritis	1
Peri-urethral abscess	1
	20
	30 %

## Circulatory:

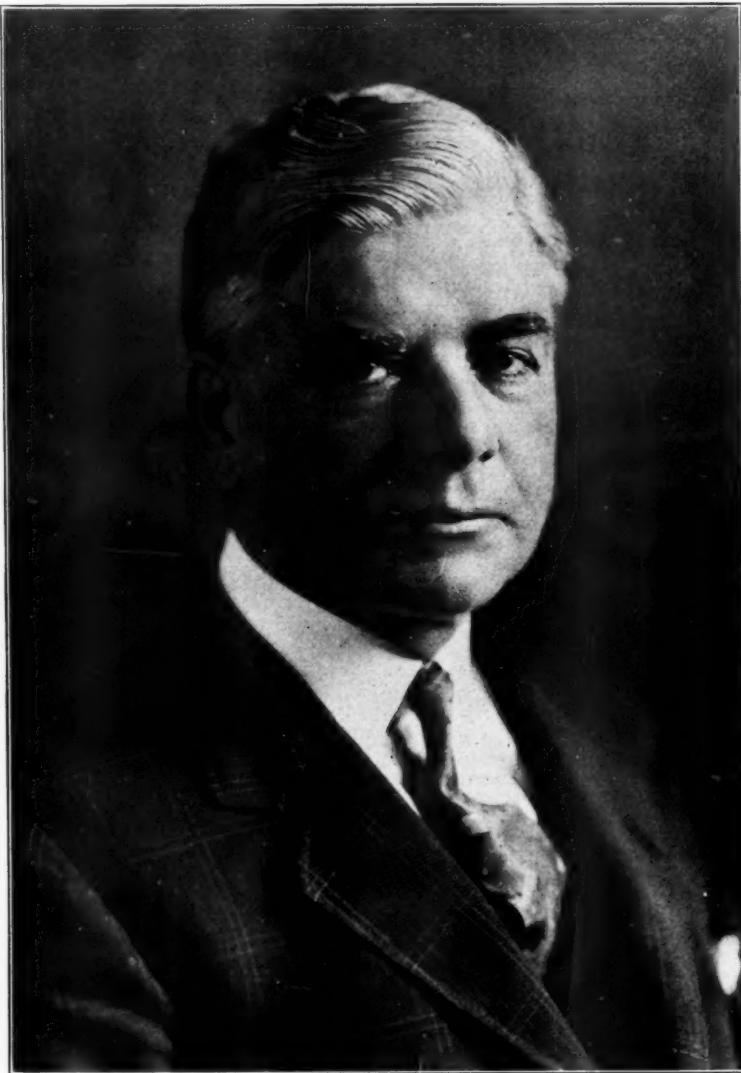
Thrombophlebitis, Antepartum	1
Postpartum	14
	15
	23 %

## Mammary:

Mastitis, non-suppurative	13
	19 %

Tabulation of pelvis could not be done because of the failure to record pelvic measurements.

No conclusions are drawn, the study being undertaken to add to the fund of obstetrical information and to show that proper training, technic and hospitalization can reduce the maternal and fetal death rates and morbidity.



CHARLES B. WRIGHT, M.D.  
*Minneapolis*  
President, Minnesota State Medical Association, 1928

## MINNESOTA MEDICINE

OFFICIAL JOURNAL MINNESOTA STATE MEDICAL  
ASSOCIATION, SOUTHERN MINNESOTA MEDICAL  
ASSOCIATION, NORTHERN MINNESOTA MED-  
ICAL ASSOCIATION, AND MINNEAPOLIS  
SURGICAL SOCIETY

Owned and Published by  
The Minnesota State Medical Association  
Under the Direction of Its

EDITING AND PUBLISHING COMMITTEE  
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All correspondence regarding editorial matters, articles, advertisements, subscription rates, etc., should be addressed to the Journal itself, not to individuals.

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All advertisements are received subject to the approval of the Council on Pharmacy and Chemistry of the American Medical Association.

The rate for classified advertising is five cents per word with a minimum charge of \$1.00 for each insertion. Remittance should accompany order. Display advertising rates will be furnished on request.

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Subscription Price: \$3.00 per annum in advance. Single Copies  
25c. Foreign Countries \$3.50 per annum.

Vol. XI

JANUARY, 1928

No. 1

## EDITORIAL

### Milestones

The year which has just come to a close has been a notable one for the State Medical Association. The achievements in the various activities of the Association are well brought out in the presidential address of our retiring president, Dr. W. F. Braasch, which appears in this issue.

The outstanding achievement of the year was the enactment of the Basic Science Act. The test of the pudding is in the eating. Already there is every indication that the purpose of the act is being achieved and that no licenses to practice the healing art are going to be issued to any applicants not well grounded in the fundamental sciences.

Of scarcely less importance was the enactment the past year of the new Medical Practice Act. The new provision under the act for yearly registration of physicians with the Minnesota State Board of Medical Examiners should make easier the detection of non-licensed practitioners. Every effort has been made by the secretary of the Board to obtain the addresses of all licensed physicians practicing in the state. Registration forms have been mailed to all known physicians in the state and these forms should be carefully filled out, special attention being paid to the affidavit to be filled in by the Clerk of the District Court. The registration fee this year and next is to be \$5.00 and thereafter \$2.00 yearly. The income derived will be used in part to employ a medical inspector as provided by law to assist in enforcing the act. Heretofore the Board has been handicapped by lack of funds and more has been expected of the Board than was justified. Numerous complaints regarding illegal practitioners have reached the Board from time to time and often the protesting physician wishes his name omitted. This is natural but if anything worth while is to be accomplished the local county attorney, in whose hands the prosecution lies, must be assisted in obtaining evidence by local physicians. Letting George do it will not accomplish results.

The Committee on Public Health Education of the State Association has been in existence a year. The task of the committee is an enormous one and available finances for the work are meager. The past year has been spent by the Committee in informal discussions of the problem with small groups of members throughout the state in an effort to crystallize the consensus of opinion of the profession. Those interested met in a large group conference in Minneapolis, December 10, and heard the subject discussed from the standpoint of the public press, the radio, the dentist, and the medical profession. Meetings of this sort will undoubtedly bring out the best course for the profession to pursue to accomplish maximum results.

We believe that the most important means of instructing the public is through the advice each physician gives his patients. Few are the families not reached in this way. And too, by their deeds ye shall know them. If every physician gave every patient honest and efficient service there would be little need for further instruction.

There is no doubt but that people are interested in individual and public health and they are getting instruction and a lot of it. Much of it is good and is given directly or indirectly by physicians. Not to mention *Hygeia*, the American Medical Association lay magazine, pick up almost any newspaper or magazine and you are almost sure to find one or more articles on medical matters. Unfortunately a great proportion of so-called health information is distinctly vicious. We are impressed of late with the seemingly greater number of obviously fake medical advertisements appearing in local newspapers, which are published undoubtedly for revenue only. It is unfortunate that more newspapers do not see the light and sacrifice a little income for the public good. Here is a place where the organized profession might accomplish something very tangible.

There have recently appeared signs of increasing interest in the university extension work carried on in coöperation with the Committee on Hospitals and Medical Education under the leadership of Dr. N. O. Pearce. The course on Physiology which is receiving such enthusiastic support from Duluth practitioners at present promises to receive the same support in the near future from physicians in the Twin Cities. It seems as though the conscientious efforts of the committee in the past are about to bear fruit in abundance.

We bid farewell to the administration of last year and greet the new administration, at the same time pledging our utmost support to the new president of the State Association, Dr. C. B. Wright of Minneapolis.

### Cigarette Advertising

Not so long ago free and generous samples of cigarettes were sent to physicians all over the country with requests for testimonials as to the superiority of the particular brand over all others. We know of no one who returned the testimonial but doubtless some did, yielding to the power of suggestion and being very obliging. The scant return of testimonials, however, did not deter the said cigarette manufacturer from at least giving the impression that some 140,000 physicians of this country recognize the superiority from a health standpoint of this certain brand of cigarettes. On the face of it the as-

sumption is false, for, although the majority of physicians probably do smoke, all of these do not smoke cigarettes, and there is as great a diversity of taste among physicians as there is among laymen.

For some time we have been impressed with the attractiveness of cigarette advertisements. The frequency with which a package of cheap cigarettes and a really beautiful healthy girl appear in such displays is noticeable. And yet, how much more often is the cigarette in real life associated with a girl who has to resort to rouge and lipstick, partly, at least, because of the cigarette. Or we see packages of cigarettes displayed with a football hero plunging through the line and are led to infer that perhaps before and after the game the portrayed hero has indulged in a cigarette of that particular brand. Those who have ever trained for any athletic sport know that smoking of any sort is an indulgence which is taboo.

Perhaps it hasn't occurred to our readers that MINNESOTA MEDICINE has never carried advertisements of tobacco in any form. We have simply followed the lead of the best medical journals in an effort to advertise only such articles as we could conscientiously recommend.

Cigarette smoking increased by leaps and bounds during the war. Because of so many hardships and so few physical comforts the cigarette was condoned. Cigarette advertising has probably played some part in altering public opinion, but when it comes to halting 140,000 physicians to further the sales of a certain cigarette the whole proposition is so absurd that it is funny.

### The Call to Positive Health

The medical profession, in the long past, has been educated to the study of the human being in disease rather than in health. Even in our medical schools the study of norms has been undertaken not as an end, but as a means, and has been curtailed at that. Anatomy has been treated as an introduction to internal medicine and practical surgery. But very recently and to fine purpose it has acquired a functional emphasis. Physiology has had its chief significance as a key to the understanding of disturbed function. Etiology, bacteriology, pathology, diagnosis and therapeutics have been, and perhaps necessarily

for the time being, the over-shadowing interests of the course.

And why not? Remedial medicine has been the almost exclusive business of the doctor. The call of sickness has been imperative. It remains the most exigent demand upon him. To get the patient well has been his absorbing and almost his only concern.

The routine of his daily life in office, home or hospital; the bent of his too scanty reading; his contributions to the literature of his calling or to the program of his professional societies have been bounded by the consideration of the abnormal.

Perforce he has left the study and the teaching of personal and communal hygiene—still more broadly speaking of public health—to the very few medically trained men and women who have found a peculiar interest outside of practice and within the field of preventive medicine; to a somewhat larger group of specifically health-trained doctors, psychologists and sociologists and to the greatly larger army of public health nurses and social service workers who have become, as Winslow puts it, the ministers and missionaries of health to the people.

And, then, in the meanwhile, in a period extending, in fact, over but little more than half a century, and mostly within half of that time, the science of human health has most marvelously unfolded itself and the consciousness of the people has most widely awakened to its value.

Striking a strong note of contrast to the call of the past to the well-nigh exclusive practice of remedial medicine—of what we may perhaps fitly term the study of negative health—there is sounding forth a new note of demand for the development and the practice of *positive health*.

This development follows two phases of progress—the one, the phase of health preservation, as a long step in advance of health restoration; the other, the phase of health promotion—a definite movement toward human betterment, physically, mentally and socially considered.

Fortunately for the part the medical profession may take in this development, there is late evidence that it desires to take its part. It should take the rôle of the teacher, the leader—but the writer would not be the faithful friend of the profession to which he himself belongs, if he did not suggest that it has much to learn

before it should assume too forwardly the task of teaching and leadership. For, while the profession has been so inevitably busy with the primary functions of remedial medicine, the followers of public health have been learning a great deal and many of them are already sharing in the work of directing and educating the people. There is much for all of us to learn who would "keep abreast of truth" in this public health field.

Among us is already a forward-looking, forward-moving, well-informed group of pediatricists by whom the signs of the new times have been early recognized. The call to the recent health conference in Minneapolis is a fine confession of faith and practice in the new gospel of positive health upon the part of a yet larger group. It should lead to an era of good works in Minnesota.

Another and still more significant evidence of interest upon the part alike of profession and people is seen in the call to a second Northwest Conference on Child Health and Parent Education, second to that put through with conspicuous success in Minneapolis last March, and to be held in March, 1928, in the city of Saint Paul.

Some eighty organizations, of state, county and civic character, and including medical, public health, nursing, educational and social groups have already had invitation to join in forming, through their representatives, a joint committee in general charge of the Conference. This support will be generous and will insure the educational value of this second effort for the promotion of child study and educated parentage.

In the next issue of *MINNESOTA MEDICINE*, we shall be able to announce the organization of the Conference under its selected officers and committees. These columns will give it full and free publicity.

The Ramsey County Medical Society has joined in the invitation to the holding of the Conference in Saint Paul, and it, together with the Hennepin County Medical Society, and their Ladies' Auxiliaries, and two District Dental Societies and their Auxiliaries, the Minnesota State Medical Society, the Minnesota State Public Health Association, and the Minnesota State Dental Association are among its invited sponsors.

May we hope that the medical profession of

this and adjoining States will make it a point to attend, in large numbers, the three days' sessions of the Conference in the latter part of next March. It has it within its power to make this occasion a still more notable one than its predecessor of last year in Minneapolis, to give a strong impetus to fathers, mothers, teachers and health workers in the direction of intelligent child study and parenthood. For the hopes of human betterment rest upon pre-natal effort, upon the study of the infant, the young child and the adolescent—in a word, of those periods when life is in the making.

RICHARD OLDRING BEARD, M.D.

**EDITOR'S NOTE:** The success of the first Northwest Conference on Child Health and Parent Education held in Minneapolis last March was due to the energy and executive ability of Dr. Richard Oldring Beard, Professor Emeritus of the University of Minnesota, Executive Secretary to the Hennepin County Public Health Association, and also to the Northwest Conference on Child Health and Parent Education. The Conference is fortunate in having obtained the services of Dr. Beard for the second meeting to be held in March of this year in Saint Paul.

## COMMUNICATIONS

The attention of the profession is called to the following letter, and readers are urged to act according to the suggestions made in the letter.

Dear Doctor:

The New England Anti-Vivisection Society has sent out a form letter announcing its plan to "introduce into the House of Representatives, at Washington, during the coming session, a bill for the exemption of dogs from vivisection." The letter requests the addressee to circulate an accompanying petition in support of the bill and to ask his representative in Congress to vote for it. The Society alleges that the "International Conference for the Investigation of Vivisection, which now includes eighty-six anti-vivisection and humane societies," is sponsor for the bill.

Congress cannot directly restrict scientific research in any state. What Congress does, however, will be an important factor in determining action by state legislatures. The anti-vivisectionists are alive to this fact. They therefore seek legislation by Congress, for the District of Columbia and other places under exclusive federal jurisdiction, in order to establish a legislative pattern that the states may be induced to follow. Moreover, it has been frankly confessed on behalf of anti-vivisection interests that if a bill to prevent scientific research involving the use of dogs is enacted, they will probably promote legislation to prevent the use of other animals for such research.

To prevent the enactment of legislation that will hinder scientific research in the District of Columbia and other places under federal control and that will be urged as a pattern for the enactment of similar legislation in your own state, it is important that you file with your senators and representatives, immediately, protests against the enactment by Congress of the bill

now proposed by the New England Anti-Vivisection Society.

Yours truly,  
W. C. WOODWARD,  
Executive Secretary,  
Bureau of Legal Medicine and Legislation.

## OBITUARY

### Dr. Anton Shimonek

Dr. Anton Shimonek, one of the older prominent surgeons of Saint Paul, died November 23 at the age of seventy.

Anton Shimonek was born at Manitowoc, Wisconsin, in 1855. He obtained his medical degree at Rush Medical College in 1879, following which he took post-graduate work for two years at Prague and Vienna and then began practicing at Beaver Dam, Wisconsin. Dr. Shimonek came to Saint Paul in the winter of 1884, continuing in the practice of surgery the rest of his life.

Dr. Shimonek was on the original staff of the City and County Hospital (Ancker Hospital) and was among the first surgeons in this part of the country to operate for appendicitis. He did pioneer work in clinical pathology and was a lecturer at the old Saint Paul Medical school, later at the Hamline Medical school. For years Dr. Shimonek gave surgical clinics in the University of Minnesota Medical school.

Besides being a member of the Ramsey County Medical Society, the State Medical Association and the American Medical Association, Dr. Shimonek was also a fellow of the American College of Surgeons and a member of the Minnesota Academy of Medicine.

### Dr. Emery Herbert Bayley

Dr. E. H. Bayley, a practicing physician in Lake City for thirty-three years, died at his home, Monday, December 19, at the age of 62.

Dr. Bayley was born at Vernon Center, Wis., Nov. 18, 1865. At the age of fourteen years he moved with his grandparents to Greeley, Colorado, where he graduated from the high school. He later graduated from the University of Colorado at Boulder, and in 1893 from Rush Medical College in Chicago. Dr. Bayley came to Lake City in 1894 and took up his medical practice. In 1896, he was married to Miss Katherine Covell of Maquoketa, Iowa.

Below is given a brief story of Dr. Bayley's professional life by one of his friends and associates in the profession.

"Emery Herbert Bayley, M.D., obtained his preliminary education at Greeley High School and University of Colorado, graduated from Rush Medical College, in 1893, served one year at Asbury Hospital, Minneapolis, and located in Lake City, Minnesota, April first, 1894.

"He became a member of the Wabasha County Medical Society in 1895, served as its president in 1899 and

again in 1913. He was a member of the Minnesota State Medical Association, the A. M. A. and several other medical and public health organizations.

"During his professional career, he contributed a number of papers to medical journals, was an active practitioner, and prominent in public health work; was for many years County Health Officer, and to the time of his death, City Health Officer for Lake City. Since its inception in 1911, he had been president of the governing body of Buena Vista Sanatorium, the Wabasha County sanatorium for the tuberculous.

"Doctor Bayley had also been an active participant in civic affairs, having held positions on the school board, on the board of trustees of the Congregational church, and in the various fraternal organizations of which he was a member.

"It goes without saying that he was a man of the highest character, and ever lived up to the best ethical standards in his personal and professional contacts.

"The officers of the Wabasha County Medical Society feel they can render no more fitting tribute to their departed member than to cite his professional history and achievements; nor can we offer any better sympathy to the bereaved than to point to his record and quote his oft repeated wish that he might continue in the midst of his activities until death."

## REPORTS AND ANNOUNCEMENTS OF SOCIETIES

### TO THE MEMBERS OF THE MINNESOTA STATE MEDICAL ASSOCIATION:

In the past few days a copy of the new Constitution and By-Laws has been sent to every member in good standing. Please save this for future reference.

Requests are constantly coming into this office for duplicates of material that has been sent to all members. It is impossible to anticipate such requests, and we suggest that every member provide himself with a folder for such material and keep it all filed in his desk.

Members of the State Medical Association are urged to pay their dues for 1928 promptly. The dues are payable by January first each year and delay by members only complicates the work of the Secretary-Treasurer. Not infrequently communications reach the Secretary's office making inquiry whether certain physicians are members of the State Association. Letters sometimes come from insurance companies requesting information relative to physicians in view to their appointment as examiners or in regard to medical insurance and the like; also from secretaries of State Boards of Medical Examiners to whom a physician has made application for license. When members have not paid their dues the Secretary's office can simply make the statement that "the applicant is not a member because he has not paid his dues and is therefore not a member of his county society, the State Association, or the American Medical Association. We regret our inability to furnish you further information."

### RICE COUNTY MEDICAL SOCIETY

The annual meeting of the Rice County Medical Society was held in the Stuart Hotel, Northfield, Wednesday, November 30.

Drs. J. M. Murdock, superintendent of the State School for Feeble Minded, Ethel R. Beede, A. L. Haynes and O. S. Neseth were elected to membership.

Dr. C. C. Chatterton, of Saint Paul, gave a very instructive talk on "Intracapsular Fracture of the Hip" which was freely discussed by the members present.

Dr. N. O. Pearce and Dr. C. B. Wright, president of the Minnesota State Medical Association, outlined the aims and objects of the University extension course in post-graduate work. The matter was referred to a committee for further investigation.

Officers for 1928 were elected as follows: President, Dr. P. A. Smith, Faribault; first vice president, Dr. W. E. Wilson, Northfield; second vice president, Dr. D. W. Francis, Morristown; secretary-treasurer, Dr. C. J. Plonske, Faribault; delegate, Dr. D. E. McBroom, Faribault, for two years; alternate, Dr. F. S. Warren, Faribault; censors, Dr. P. A. Smith, Faribault; Dr. Joseph Moses, Northfield; Dr. C. A. Traeger, Faribault.

### THE A. M. A. MEETING

Arrangements are being made for the scientific exhibit of the Minneapolis Session of the American Medical Association, June 11 to 15, 1928. The scientific exhibit will be located in the Municipal Auditorium. Applications must be sent in before March 20, to the A. M. A. headquarters, 535 North Dearborn Street, Chicago, Illinois. No assignment of space will be made before April 15.

### STEELE COUNTY MEDICAL SOCIETY

Dr. E. Q. Ertel was elected president of the Steele County Medical Society at its annual meeting, Wednesday, November 9.

Other officers named are: Vice president, Dr. E. W. Senn, Owatonna; secretary, Dr. J. A. McIntyre, Owatonna; treasurer, Dr. F. M. Smersh, Owatonna.

Dr. T. C. Quigley, Owatonna, retiring president, was named delegate to the annual meeting of the Minnesota State Medical Association. During the evening's program District Judge F. W. Senn discussed medical questions from a legal viewpoint.

### RAMSEY COUNTY MEDICAL SOCIETY

At the November meeting of the Ramsey County Medical Society the following officers were elected for the ensuing year: Dr. E. M. Jones, president; Dr. Wallace H. Cole, vice president; Dr. Albert G. Schulze, secretary-treasurer (re-elected); Dr. Charles D. Freeman, member of Board of Trustees of the Boeckmann Building Fund (re-elected).

### MOWER COUNTY MEDICAL SOCIETY

At the annual meeting of the Mower County Medical Society held November 17 at Austin, the following officers were elected for 1928: President, Dr. G.

R. Melzer, Lyle; vice president, Dr. C. L. Sheedy, Austin; secretary, Dr. Herbert Fisch, Austin; treasurer, Dr. A. E. Henslin, Le Roy.

#### SCOTT-CARVER COUNTY MEDICAL SOCIETY

The Scott-Carver County Medical Society held its quarterly meeting at Jordan, Minnesota, Sept. 29, 1927.

After the transaction of routine business Dr. W. F. Braasch, president of the State Medical Association, gave a very instructive address on "Renal Calculi." Dr. C. B. Wright, president-elect, gave an interesting discussion on the subject of "Medical Economics." Dr. H. A. Schneider entertained the members at a banquet at the Merchants Hotel.

#### NICOLLET-LE SUEUR COUNTY MEDICAL SOCIETY

The winter meeting of the Nicollet-Le Sueur County Medical Society was held in Le Sueur, Dec. 13, 1927.

The business session followed a banquet given at the Le Sueur Hotel. On motion, Dr. M. E. Lenander and Dr. M. C. Peterson were elected members of the Society. The Board of Censors reported favorably on the application of Dr. Louisa Kirschbaumer, graduate of the University of Vienna in 1918, whose license in United States is pending.

The annual election of officers resulted as follows: President, Dr. Hewson; vice president, Dr. Swan Ericson, Le Sueur; secretary, Dr. J. W. Daniels, St. Peter; treasurer, Dr. F. P. Strathern, St. Peter.

Dr. Ericson was elected delegate to the State Medical Association and Dr. Daniels, alternate. Dr. Aitkens was elected censor.

The scientific program included a paper by Dr. H. B. Aitkens on "Alcohol—Its Physiological Effect and Medico-Legal Aspect."

Dr. F. P. Strathern reported a case of "Ectopic Pregnancy" and Dr. M. C. Peterson reported a case of "Spontaneous Rupture of the Heart."

#### OF GENERAL INTEREST

Dr. Nellie Barsness of Saint Paul has returned from Vienna and has resumed practice at 541 Lowry Building.

Dr. Fred L. Adair of Minneapolis announces the limitation of his practice to diseases of women, pathological obstetrics and consultations.

The engagement has been announced of Miss Helen Callaghan to Dr. J. Richards Aurelius of Saint Paul. The wedding will take place February 11.

Dr. Woodard Colby of Saint Paul has announced the removal of his offices to 814 Lowry Building. Dr. Colby limits his practice to diseases of infants and children.

Public health reports this fall have shown the prevalence of an unusual number of cases of poliomyelitis in California, Oregon, Illinois, Indiana, Michigan, New York and Massachusetts.

Dr. E. Libman of New York addressed the Minnesota Pathological Society, November 22, on the sub-

ject of "Observations on Endocarditis with Special Reference to Healing in the Subacute Bacterial Variety."

Dr. V. C. Crowl, formerly of Bertha, Minnesota, who has been in California for the past two years, is now located at Home Gardens, California, and has transferred his membership to the Los Angeles County Medical Society.

Doctor Koob, who recently finished his internship at Duluth, Minnesota, has taken over the operation of the hospital at Richmond, Minnesota, which was left vacant by Dr. R. N. Jones, who recently moved to St. Cloud, Minnesota.

Dr. Emil Geist and Dr. Myron O. Henry of Minneapolis have announced the formation of a partnership in the practice of medicine, beginning January first. Dr. Henry was associated with Dr. Geist prior to undertaking his own private practice.

Dr. Richard O. Beard, executive secretary of the Hennepin County Public Health Association, has accepted the post of general secretary and will be in charge of the Northwest Child Health and Parent Education Conference to be held in Saint Paul in 1928.

Drs. W. H. Goeckerman, H. G. Irvine, Paul O'Leary and H. E. Michelson of the Minnesota Dermatological Society attended the meeting of the Mississippi Valley Dermatological Association held in St. Louis on November 19. The 1928 meeting of the association will be held in Minneapolis and Rochester.

Announcement has been received of the marriage of Miss Josephine Anderson of Saint Paul to Dr. Emmett A. Heiberg of Fergus Falls. Miss Anderson is well known to members of the profession in Saint Paul, having been in charge of the operating room at St. Luke's Hospital for a number of years.

Dr. A. C. Strachauer, professor of surgery and director of the Cancer Institute, University of Minnesota, gave a talk on "Cancer, illustrated by lantern slides," at the scientific meeting of the northern district (including North Dakota and Manitoba) of the American College of Surgeons in Duluth, November 17, and 18.

The annual conference of the secretaries of the component societies of the State Medical Association will be held in Saint Paul, January 14. At this conference, which has come to be a yearly affair, matters of importance to each component society will be discussed and each secretary is urged to make every effort to attend.

On Dec. 1, 1927, a new clinic was organized under the name of St. Cloud Clinic, with offices in St. Mary's building. The personnel of the clinic is made up of Dr. M. J. Kern, x-ray and physiotherapy department; Dr. T. N. Fleming, eye, ear, nose and throat department; Dr. H. B. Clark, department of internal medicine, and Dr. R. N. Jones, department of surgery.

The physicians in Pelican Rapids, Minnesota, this fall published a public signed announcement that patients indebted to local physicians, who have not made satisfactory payments within the year, will be refused treatment by the other local physicians, whose names appear. The main reason given for the necessity for

this step is the wide prevalence of installment plan purchasing to the extent that no provision is made for payment for hospitals and physicians.

The St. Cloud Hospital which has been under construction for the past two years is nearing completion. Equipment and furniture are being moved in and the building will be ready about January 15. There will be three hundred beds, of which two hundred will be available for patients and the other one hundred will be used for nurses and hospital help. The building was built by the Benedictine Sisters of St. Joseph, Minnesota, who have operated the present St. Raphael's Hospital at St. Cloud. The cost of the new structure will total, with equipment, two million dollars. The old hospital will be used for a home for the aged under the direction of the present owners.

## NEW AND NON-OFFICIAL REMEDIES

The following articles have been accepted by the Council on Pharmacy and Chemistry:

### ABBOTT LABORATORIES:

Staphylococcus Mixed Bacterin  
Typhoid Prophylactic, 5 c.c. vials  
Typhoid Prophylactic, 20 c.c. vials

### LEDERLE ANTITOXIN LABORATORIES:

Anaerobic Antitoxin (Polyvalent)-Lederle  
MERCK & CO., INC.:  
Erythrol Tetranitrate Tablets-Merck,  $\frac{1}{4}$  grain

### H. K. MULFORD CO.:

Ampuls Dextrose (d-Glucose) 10 Gm., 20 c.c.  
Ampuls Dextrose (d-Glucose) 25 Gm., 50 c.c.

### PARKE, DAVIS & CO.:

Ephedrine Sulphate-P. D. & Co.

### PROPHYLACTO MFG. CO.:

Ephedrine Hydrochloride-Pemco.

### E. R. SQUIBB & SONS:

Insulin-Squibb, 100 units, 10 c.c.

### TAILBY-NASON CO.:

Nason's Palatable Cod Liver Oil.

## TRUTH ABOUT MEDICINES

*Scarlet Fever Streptococcus Toxin-Squibb.*—This product (New and Non-official Remedies, 1927, p. 375) is now marketed in packages of five vials of toxin containing, respectively, 500, 2,000, 8,000, 25,000 and 60,000 skin test doses; in packages of fifty vials of toxin, ten containing 500 skin test doses, ten containing 2,000 skin test doses, ten containing 8,000 skin test doses, ten containing 25,000 skin test doses, and ten containing 60,000 skin test doses. E. R. Squibb & Sons, New York.

*Sulpharsphenamine-DePree.*—A brand of sulpharsphenamine (New and Non-official Remedies, 1927, p. 80). It is supplied in ampules containing, respectively, 0.1, 0.15, 0.2, 0.3, 0.4, 0.45, 0.6, 1.0, and 3.0 Gm. The

DePree Co., Holland, Mich. (Jour. A. M. A., November 5, 1927, p. 1607.)

*Ephedrine Hydrochloride-Pemco.*—A brand of ephedrine hydrochloride-N. N. R. For a discussion of the actions, uses and dosage of ephedrine hydrochloride, see *The Journal A. M. A.*, March 19, 1927, p. 925. Prophylacto Manufacturing Co., Chicago.

*Ephedrine Sulphate-P. D. & Co.*—A brand of ephedrine sulphate-N. N. R. For a discussion of the actions, uses and dosage of ephedrine sulphate, see *The Journal A. M. A.*, March 19, 1927, p. 925. Parke, Davis & Co., Detroit. (Jour. A. M. A., November 12, 1927, p. 1693.)

*Nason's Palatable Cod Liver Oil.*—Cod liver oil containing 0.62 per cent of essential oils as flavoring, having a vitamin A potency such that 0.002 Gm. per day is adequate to promote the growth of young albino rats and a vitamin D potency such that 0.02 Gm. per day for eight days will cure experimental rickets in rats which have been deprived of vitamin D and of ultraviolet light. Tailby-Nason Co., Boston.

## PROCEEDINGS OF THE MINNESOTA ACADEMY OF MEDICINE

### Meeting of September 14, 1927.

The regular monthly meeting of the Minnesota Academy of Medicine was held at the Town and Country Club on Wednesday evening, September 14, 1927, at 8 o'clock. Dinner was served at 7 o'clock. There were 29 members present.

In the absence of the President, the meeting was called to order by Dr. H. L. Ulrich.

The minutes of the May meeting were read and approved.

The Secretary-Treasurer's reports for 1926-27 were read and approved.

A letter was read from the President, Dr. F. E. Burch, asking that the reading of his Presidential Address be postponed to the October meeting on account of his absence from the city.

The election of officers resulted in the following being elected for the ensuing year:

President.....Dr. John E. Hynes (Minneapolis)  
Vice-president.....Dr. C. N. McCloud (St. Paul)

Secretary-Treasurer.....Dr. Carl B. Drake (re-elected)

The scientific meeting of the evening was as follows:

Dr. E. M. HAMMES (St. Paul) reported a case of streptococcal meningitis associated with otitis media, with a radical operation. (Case was seen in consultation with Dr. A. W. Hilger.) During the course of the acute illness to the time of death there was no evidence of meningeal irritation, although the spinal fluid was of a markedly purulent character and contained many streptococci. Detailed report of the case will be published.

### DISCUSSION

DR. HAMMES: I would like to ask some of the ear men whether it is not unusual to have meningitis

develop twenty-four hours after operation, with the dura showing nothing at the time of operation?

DR. HENRY F. HELMHOLZ (Rochester) read his Thesis, entitled "Elective Localization of Colon Bacilli in the Kidney." Lantern slides were shown.

#### DISCUSSION

DR. W. R. RAMSEY (St. Paul): We are all, not only as pediatricians, very much indebted to Dr. Helmholtz for this very excellent work, because it really, after a good many years of rather intensive work all over the world on this subject, has been able to show something positive. It is rather interesting to note that with all his work he has not been able to demonstrate by what route infants get pyelitis—whether by the blood route or some other. Some years ago I was among the first, in this country at least, to report cases of pyelitis, as I had been doing some work in Escherick's Clinic in Vienna, where he had done a good deal of work on the colon bacillus as the cause of pyelitis. About twenty years ago Dr. Greene asked me to read a paper on obscure fevers in children and when I returned home I read a paper on pyelitis, because that explained most of the obscure fevers in children. A few years ago I found that severe symptoms could occur without pus being found in the urine, but usually was able to find the colon bacillus in the urine for several days at a time. The fact, however, that there are certain strains of colon bacilli that tend to localize in the pelvis of the kidney and produce pyelitis, is a very distinct and original research for which we can thank Dr. Helmholtz.

DR. H. L. ULRICH (Minneapolis): I would like to ask Dr. Helmholtz if he noticed any relation to the amount of bacilli injected and the amount excreted?

DR. HELMHOLZ (in closing): In answer to Dr. Ulrich's question, our previous work on the passage of bacilli through the kidney makes us believe that only after actual renal lesions have been produced do bacilli pass through the kidney. Of course, this problem is old and dates back to 1886 when Wysskowitz started the ball rolling. There has been a great deal of work both pro and con. Our experiments seemed to indicate that the uninjected kidney did not allow bacilli to pass through. If a fresh animal was used for each experiment we practically never found that any bacilli passed through the renal filter in five hours. After seven hours virulent staphylococci regularly appeared in the urine and regularly produced abscesses in twenty-four hours. We repeatedly injected avirulent streptococci, staphylococci, and colon bacilli into the blood stream and at no time within twenty-four hours did they appear in the urine.

In regard to what Dr. Ramsey said about modes of infection, I feel that we have made one contribution. In studying bacilluria in the rabbit, of twenty-five animals two had definite pyelitis and had bacilli in the

ureteral urine, and twenty-three had bacilluria in the bladder only, so that I feel that in the study of these infections we are dealing with an ascending infection in the urinary tract.

DR. F. J. HIRSCHBOECK (Duluth) read his Thesis, entitled "Massive Collapse of the Lung." Lantern slides were shown.

#### DISCUSSION

DR. C. B. DRAKE (St. Paul): I think this is a very interesting subject and one to which it is well to have the attention of the surgeons as well as the medical men called. It occurs much more frequently than we have thought. I know that since the condition has been called to my attention I have been on the lookout for it and just during the past summer I have seen two cases. One followed an appendectomy which responded beautifully to this maneuver of turning the patient on the uninjured side and telling him to cough. The other case was that of an old woman, following a cholecystectomy some three weeks previous, where I was very suspicious of the condition, but it was not marked enough to be sure on physical examination. The maneuver of turning her onto the unsuspected side probably prevented her from developing a more extensive collapse. I was just wondering whether some of these pneumonias in elderly individuals are not collapse of the lung, or begin that way. I never thought of this condition as coming with pneumonia. Another patient (a physician) with pneumonia, whom I helped to take care of, coughed up a lot of material and, being a doctor, felt sure he had a lung abscess. An accompanying lung collapse would explain this occurrence. Of course it would be rather difficult to be sure of such a complication without the evidence of an x-ray examination.

DR. H. F. HELMHOLZ (Rochester): I am very much interested in Dr. Hirschboeck's paper and think it might be of interest to report on a paper of Crozier Griffith of Philadelphia given before the American Pediatric Society, calling attention to the fact that not only in massive collapse of the lung, but in pneumonia also, was the heart occasionally drawn to the affected side. He presented a series of five cases of definite pneumonia in which the heart was drawn to the affected side.

DR. HIRSCHBOECK (in closing): It had not occurred to me that this condition occurred in older people. In older people the congestion is usually bilateral and this condition is unilateral in most instances. I don't know what Dr. Griffith based his views on, but it is just possible that what he found may have been pneumonia atelectasis. It may be that Dr. Griffith's cases were of the pneumonic type, as described by Dr. Abt.

The meeting adjourned.

CARL B. DRAKE, M.D.  
Secretary.

## CASE REPORTS

Members are requested to report interesting and unusual cases for publication in this department. Many cases reported at hospital staff meetings and similar meetings are very instructive and worthy of publication.

## RETROPERITONEAL FIBROMYOMA\*

## REPORT OF A CASE

ELOISE PARSONS, M.D.

Fellow in Medicine, The Mayo Foundation  
Rochester, Minnesota

Retroperitoneal fibromyoma was found in a patient who also had multiple fibro-adenomata in the breast, a large ovarian cyst, and a bicornute uterus.

A married woman, aged 28, came to the Mayo Clinic January 24, 1927, because of a lump in the left breast which she had discovered accidentally two years previously. The lump had been gradually increasing in size and became larger and somewhat tender at the menstrual periods. A second lump had been found one year after the first was noted, and a third about a month before the patient presented herself for examination. There were no other complaints except severe dysmenorrhea which caused her to go to bed for three or four hours after the onset of the menstrual flow, which occurred at regular intervals but was profuse. There was a family history of carcinoma; one grandfather died of carcinoma of the lip, and the other of carcinoma of the stomach. The patient had an infection diagnosed whooping cough when four years of age, which caused paralysis of the right foot. Marked contracture and deformity resulted and could not be corrected even by operation performed when she was fourteen years old. She had scarlet fever at the age of seven, diphtheria at eight, and influenzal pneumonia at nineteen. She had been married ten years, and had been pregnant twice; there was miscarriage at two months soon after marriage, and two years later a normal child was born after very difficult labor.

The patient was a small woman, 4 feet 9 inches tall, and weighed 105 pounds, her usual weight. Nodules which were firm but not attached were present in the upper outer quadrant of the left breast. The edge of the liver was palpable, and an indefinite mass could be felt in the median line and the right lower quadrant of the abdomen; in the pelvis there was a mass the size of a three months' pregnancy, diagnosed tumor of the ovary, and palpation of the uterus suggested bicornute uterus. Examinations of the blood and urine were negative. The blood Wassermann test was negative. Roentgenograms of the chest and urinary tract were negative.

At operation a tumor, about 12 cm. in diameter, was removed from the outer quadrant of the left breast; the pathologic diagnosis was multiple fibro-adenoma

averaging 8 mm. in diameter, occurring with chronic mastitis.

Abdominal exploration through a median-line incision revealed a hemorrhagic cyst about the size of a three months' pregnancy in the right ovary; the cyst was removed, together with the right tube and ovary. The appendix, which was definitely diseased, was removed. The uterus was bicornute with a definite sulcus between the two halves, and probably contained two partial uterine cavities. The uterus was brought up into position and held there by internal shortening of the round ligaments. The ovarian lesion proved to be benign multilocular tarry cyst, the largest cyst being 8 cm. in diameter.

Exploration of the upper portion of the abdomen revealed a retroperitoneal tumor, about 15 cm. in diameter, in the right suprarenal region, apparently not



Fig. 1. Anatomic relationships of large retroperitoneal tumor in right suprarenal region.

connected with the kidney (Fig. 1). Two weeks later this tumor was removed. It proved to be a large single fibromyoma which was situated above the right kidney and below the liver. It had no connection with the pancreas. Its blood supply came from the median line. The tumor was 15 by 11 by 9 cm. and weighed 850 gm. (Fig. 2).

Recovery was uneventful. The patient writes six months later that she is perfectly well, has gained 10 pounds, and is free from dysmenorrhea.

## DISCUSSION

Benign retroperitoneal tumors are unusual; about 200 have been reported in the literature. Masson and Horgan, in 1921, reported twelve cases of retroperi-

\*Patient observed on the service of Dr. James C. Masson, Mayo Clinic. Submitted for publication November 26, 1927.



Fig. 2. Large single retroperitoneal fibromyoma, 15 by 11 by 9 cm., weighing 850 gm.

tonal lipoma from the Mayo Clinic. C. H. Mayo and Dixon reported three cases in 1927 and stated that twenty-two patients with retroperitoneal lipoma have been operated on at the Mayo Clinic since 1910.

Magoun reported two cases of retroperitoneal fibromyoma operated on at the Mayo Clinic previous to 1919. He reviewed the literature and found only five

cases reported. Outlines of the four cases of retroperitoneal fibromyoma which have been operated on since 1919 at the Mayo Clinic are shown in the tabulation.

Since 1919 there have been few cases of retroperitoneal fibromyoma reported in the literature. Ogilvie reports the case of an unmarried woman, aged 55, in whom the fibroma was attached to the second and third lumbar vertebrae. It was on the left side and was about the size of an orange. The blood supply came from the lumbar arteries. The origin was assumed to be the anterior common ligament.

A very large fibroma, 25 by 20.5 by 14 cm., weighing 4,750 gm., is reported by Dannheisser, in a patient aged thirty-seven years. Histologically red degeneration, necrotic areas and hyalinization were found.

Bevers reports a large retroperitoneal fibromyoma attached to the apex of the bladder in a woman aged 49. He believes that its origin may have been either the bladder or the urachus. There are other reports of fibroma of the bladder to substantiate this opinion.

Fibromyomas are reported in other areas, in the mesentery, in the heart, and in the wall of the stomach and intestines.

The origin of the fibromyoma in the case here reported can only be a matter of speculation. About 90 per cent of myomas develop in the intermediate

TABULATION  
SUMMARY OF FOUR CASES OF RETROPERITONEAL FIBROMYOMA OPERATED ON (1919-1927)

Case	Date	Age, Sex	Symptoms	Attachment and site of tumor	Weight and Size	Pathologist's Diagnosis
1	3-28-21	55 M	Loss of weight and strength for six months; epigastric pain and pressure with vomiting.	Retroperitoneal tumor size of four months' pregnancy, below pole of right kidney; tumor excised through incision in mesocolon outside ascending colon.	580 gm., 14 by 9 cm.	Degenerating edematous fibromyoma
2	1-16-25	66 M	Growth in the upper portion of the abdomen without symptoms for three months.	Large tumor which seemed to originate from the left side of the pelvis, attached to the mesocolon, sigmoid and sacrum.	2800 gm., 24 by 17 cm.	Hyaline edematous degenerating fibromyoma
3	8-13-26	21 F	Leukorrhea	Absolutely detached from uterus or broad ligament with blood supply from lateral and posterior wall of pelvis; altogether retroperitoneal with vascular adhesions throughout.	390 gm., 9 cm. in diameter	Parasitic degenerating fibromyoma
4	1-24-27	28 F	Tumor of breast	Details given in case report.	850 gm., 15 by 11 by 9 cm.	Fibromyoma

layer of the smooth muscle of the uterus, but they may develop in any smooth muscle. As they increase in size the site may change, and even the blood supply may change, as shown by Masson in a discussion of parasitic fibromyoma. Masson also reports one case of large retroperitoneal fibromyoma attached by a pedicle to the cervix to show how such a fibromyoma may become parasitic. In the case reported here there is no indication of any relation of the tumor to the uterus.

The presence of multiple fibro-adenomas in the breast is regarded as a coincidence, although in certain persons there is an evident tendency toward tumor formation. The excess of fibrous tissue in such widely separated situations is interesting.

The inheritance of this patient was investigated as carefully as possible. The mother and father are living and normal; there are two sisters with healthy children. The death of the two grandfathers from cancer made the patient concerned about the tumors in the breast. Her one child is normal in every way. The patient is above the average in mentality. That there was deficiency in the germ plasm of this patient or in the embryologic development is shown by the presence of the bicornuate uterus. She had been pregnant twice without retroperitoneal tumor or bicornuate uterus being diagnosed. There is not sufficient evidence to trace the origin of the fibromyoma to smooth muscle left in the faulty embryologic development of the Müllerian ducts.

The large, tarry ovarian cyst has no particular embryologic significance. Its presence was the occasion for the laparotomy during which the symptomless retroperitoneal tumor was discovered.

#### SUMMARY

Retroperitoneal fibromyoma is rare. In 1919 there were reports of eight cases in the literature, two from the Mayo Clinic. There have been four others at the Mayo Clinic since 1919, one of which is reported here.

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#### ACUTE YELLOW ATROPHY OF THE LIVER\*

##### REPORT OF CASE

RUSSELL J. MOE, M.B.  
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In view of the comparative frequency of occurrence of acute yellow atrophy of the liver in this hospital, I have undertaken a brief review of the subject. Many authors state that acute yellow atrophy is a rare disease. Osler states that among 28,000 medical cases admitted to Johns Hopkins Hospital in nearly twenty-three years there were only three cases. At this hospital we must take exception to the former statement because we have had during the past sixteen months (July 1, 1926, to November 1, 1927) four cases, all of which terminated fatally and the diagnosis proved at necropsy.

A review of the essential findings of these four cases is shown in Chart I.

The age incidence is in the early part of the third decade, ranging from twenty-one to twenty-three years. Three cases were in females and one in a male. One case may be termed as a fatal complication of pregnancy. Stupor, delirium, and loss of consciousness were present in all four cases. The duration of the illness varied from nine to twenty-two days. The liver of a normal individual weighs 1,500-1,800 grams. The weight of the liver in these cases varied from 540 to 1,640 grams and it is interesting to note that the largest liver was found in the case associated with pregnancy and this case was also of the shortest duration. Focal infections are now being studied as probable etiological factors in acute yellow atrophy. Case I showed a chronic ethmoid and frontal sinusitis, while Case IV had generalized dental caries.

Report of Case IV. The patient was a male Norwegian, 21 years of age, single, who had lived in Duluth only two months. For about a year previous to that time he had been a sailor and had visited Africa, Italy, Spain and various other countries. No further information as to past history nor family history could be obtained.

On July 15, 1927, patient first became ill with weakness, headache and icterus. He went to see a physician, who advised him to enter the hospital. This was refused, so the patient was kept under treatment at home for a week, at the end of which time he felt somewhat improved and returned to his work at day labor. He remained at work for two days, but finally became so weak he was forced to quit. The jaundice had increased in intensity. He was admitted to the hospital on July 31. He was stuporous and seemed very much confused. At times he would become delirious and very restless, so much so that it was necessary to keep him in restraint. The temperature was slightly subnormal and the pulse was 60, of good quality. He presented a 3+ icterus of skin and sclera. Teeth showed absence of upper incisors and generalized dental caries. Chest and heart were negative. The abdomen was

\*From the Medical Service of St. Luke's Hospital, Duluth, Minnesota.

soft and not tender. The liver and spleen were not palpable. The upper extremities showed occasional twitching movements suggesting advanced toxicosis or meningeal irritation.

Laboratory findings were: Hb. 95 per cent, R.B.C.

CHART I								
Case	Age	Sex	Assoc. with Pregnancy	Icterus	Delirium	Days Duration	Liver Wt. Gm.	Focal Infection Frontal and Ethmoid sinusitis
I	22	F	0	+	+	15	540	
II	21	F	0	+	+	22	755	
III	23	F	+ 6 mo.	+	+	9	1640	
IV	21	M	0	+	+	17	1000	Dental caries

4,200,000, W.B.C. 10,000; Van den Bergh—direct-negative; indirect-positive.

Icterus index 166.

The problem involved in this case as in all cases was one of diagnosis and not of treatment, as the latter is nil. The essential findings were:

1. Jaundice.
2. Temperature usually subnormal until prior to exitus.
3. Symptoms of toxicosis.
  - (a) Progressive prostration.
  - (b) Delirium.
  - (c) Coma.
4. Diminution in the size of liver in those cases not complicated by pregnancy, but in the latter about normal in size.
5. High icterus index.

To be considered besides acute yellow atrophy were:

1. Catarrhal jaundice. Ruled out because most of these cases run a low grade temperature associated with gastro-intestinal symptoms. Also the liver is enlarged and painful.
2. Weil's disease. This disease shows a different fever curve, pain in calf muscles, hemorrhagic symptoms as epistaxis and bleeding from gums, and also enlargement of the liver and spleen.
3. Phosphorus poisoning. Negative history. Liver would be enlarged and gastric symptoms would be suggestively severe in the earlier stages.

#### PYRIDIUM

Pyridium appears to have been originated by one Professor Ostromislenski, who came from Russia several years ago to give America the benefit of his researches. In a circular issued by Merck & Co., the preparation is said to be "a colloidal condensation product of Phenyl-Azo-Diamino-Pyridine Hydrochloride as prepared by Prof. Ostromislenski" and it is recommended in the treatment of "Genito-Urinary Infections, especially Gonorrhea." Apparently, the only evidence for the value of Pyridium is contained in a book by Ostromislenski; Merck & Co. has not presented the product to the Council on Pharmacy and Chemistry for determination of its acceptability for New and Non-official Remedies. (Jour. A. M. A., November 19, 1927, p. 1803.)

4. Hemolytic jaundice. Ruled out by blood picture, non-palpable spleen and icterus index.

The disease progressed rapidly. The stupor and delirium gave way to loss of consciousness with Cheyne-Stokes respiration and profuse perspiration. A pro-

gress note written the day before exitus stated that the liver had decreased in size. Just before death on September 2 the temperature rose to 108°.

The essential findings at autopsy were:

1. Liver weighing 1,000 grams. The surface was mottled with yellow patches. It was slightly softer than normal. The cut surface showed some large yellowish areas alternating with purplish red patches. These yellowish patches were softer than normal tissue but some were fairly firm.
2. Teeth showed extreme dental caries.

Diagnosis: 1. Acute yellow atrophy. 2. Dental caries.

Summary:

1. Acute yellow atrophy is only a relatively rare disease.
2. Incidence is greater in females than in males, and greatest in the third decade of life.
3. Diminution in size of liver is not noticeable when the disease is associated with pregnancy.
4. The diagnosis is based on the cerebral symptoms of a progressive toxicosis associated with a high icterus index.

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The purpose of a case report in a scientific medical publication is instruction, not entertainment. The author's knowledge of scientific medicine is revealed far more by what he may leave out of such a document than by what he puts in. The case report should tell its story in clear, straightforward, narrative style. Unimportant observations which are without bearing on the clinical history of the case should be avoided. Negative observations are of value in few instances. The well-informed physician will not give the minutiae of examinations that demonstrate normality, nor will he provide an account of the various illnesses suffered by all the members on the patient's family tree, unless these have some bearing on the case that is reported.—Morris Fishbein, *A. M. A. Bulletin*, Nov., 1927.

## PROGRESS

Abstracts to be submitted to Section Supervisors.

Members are urged to abstract valuable articles which they run across in their reading and send the abstracts to the physicians in charge of the respective sections. In order to avoid duplication it would be well to communicate with one of the section supervisors before the article is abstracted.

## SURGERY

### SUPERVISORS:

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GAUCHER'S DISEASE: Harold E. Santee, M.D. (Ann. of Surg., 1927, LXXXVI, 707-714). About fifty cases of this disease have been reported since Gaucher's original description in 1882. It is a disease of unknown origin which involves the reticulo-endothelial system pathologically in such a way that on section of specimens from this system we find usually in the order named spleen, liver, bone marrow and lymph-nodes packed with the typical Gaucher cells practically to the point of replacement late in the disease.

Clinically we find progressive enlargement of the spleen and liver, anemia and subicteric tinting of the skin. Bone changes may apparently precede spleen and liver enlargement in some cases, and the presence of wedge-shaped yellowish thickenings in the conjunctivae are considered almost pathognomonic.

Etiologically this disease has not been definitely classified. Microscopically, the Gaucher cells present a typical appearance and the absence of lipoidal substance as well as the presence of the cerebroside kerasin apparently in the cell substance has been shown by Lieb and Epstein.

Splenectomy has been done in about thirty cases with an operative mortality about 20 per cent. Favorable results have been reported in sixteen cases; the average length of life is apparently prolonged.

The author reports two cases in brothers. He concludes that cure of a disease as diffuse as Gaucher's cannot be expected from the removal of a single involved element, such as the spleen. Relief of major symptoms, however, seems indicated, and on these grounds splenectomy seems to be justified although too few such cases have been recorded to warrant definite conclusions.

HAROLD E. SIMON, M.D.

THE SURGICAL TREATMENT OF TUBERCULOUS GLANDS OF THE NECK: Howard M. Clute, M.D. (Ann. of Surg., Vol. LXXXVI, pp. 666-682). One hundred and thirty-one cases of tuberculous glands of the neck, proved at operation, are reviewed in detail. The condition was found to exist in females more commonly than males, there being 93 females and 47 males in the series. Although commonly regarded as a disease of adolescence the condition was found at any age. Six patients were less than one year of age and three were between the ages of 61 and 65.

Regarding the location of glands, twelve cases had glands in either the right or left submaxillary triangle, each side being involved separately in six cases; 10 in the right posterior cervical region, and two in the left; 25 in the right anterior cervical region; 24 in the left; one case had glands limited to the submental region, one had a suprasternal node and one showed sub-clavicular glands. Nine cases had bilateral involvement, the location otherwise not being mentioned. The duration of the condition varied from three days to 45 years. Sixty-five patients had caseation or abscess formation. Twelve patients had a discharging sinus in their neck. Nineteen cases had previous oral infection, one case having the tonsils removed which proved pathologically to be tuberculous.

Innumerable types of previous treatment were tried. The chief symptom that brings the patient to the surgeon is the tumor mass. Pain and tenderness is rarely an outstanding complaint. Five common conditions must be differentiated clinically: (1) acute non-tuberculous adenitis; (2) Hodgkin's disease; (3) bronchial cyst; (4) goitre, and (5) malignancy. Two cases are reported of goiter with enlarged glands. One case proved to be goiter associated with early Hodgkin's disease and the second case goiter with tuberculous glands. The latter case was regarded as malignancy of the thyroid with enlarged cervical nodes.

The treatment of abscessed or exceedingly caseous tuberculous gland consists in making an incision over the abscessed gland, curetting out the granulation tissue and wiping out the cavity with full strength tincture of iodine. A small gauze pack is inserted in the wound. X-rays are a valuable therapeutic agent after this procedure. If a persistent sinus remains several months after operation, it should be carefully dissected and removed. A broken down gland will usually be present at the base of the sinus.

Radical excision of large masses of glands, involving a large area of the neck, is being treated surgically more conservatively than formerly. X-ray treatment for six months prior to surgery is carried out. The author believes that in definitely enlarged glands, which are well localized, and have been present in the neck for two months or over, in a patient who is five years or over, complete removal is the method of choice. Postoperative x-ray treatment is valuable but not used in abscessed cases, till they have been drained.

It is exceedingly important to avoid injury to the spinal accessory nerve or inframandibular branch of the facial, with resultant paralysis of the sternomastoid and trapezius and depressor anguli oris. Two cases in

which the spinal accessory nerve was cut at operation were sutured with perfect functional results two years after operation.

The operative mortality has been nil and the best end-results were seen in patients who came early for treatment. Surgery offers more to individuals who cannot afford the time and expense of prolonged hygienic treatment. Postoperatively all possible sources of infection should be eliminated combined with x-ray or radium in selected cases.

D. P. GREENLEE, M.D.

**TRAUMATIC RUPTURE OF THE NORMAL SPLEEN:** Hamilton Bailey, M.D. (Brit. Jour. of Surg., Vol. XV, No. 57, p. 40). The paper is founded on 32 cases collected from the London Hospital records. Most of the cases naturally occur in males. There is always the history of severe trauma. Loss of consciousness very soon after the injury is a frequent occurrence. Vomiting is infrequent in uncomplicated cases.

Cases are divided into four groups: (1) The patient rapidly succumbs, never rallying from the initial shock. (2) Initial shock—recovery from shock—signs of ruptured spleen. (3) The signs of an intra-abdominal disaster are delayed and (4) spontaneous recovery occurs. In the first group were three cases, in this group usually the spleen is completely detached from its pedicle; only a small per cent of cases are fatal rapidly.

Most of the cases fall in the second group, having shock and signs of rupture. The general signs of rupture are those of intra-abdominal hemorrhage, which is frequently very hard to diagnose and signs are misleading. The local signs of ruptured spleen are therefore of prime importance:

1. Abdominal rigidity—variable, usually left upper abdomen.
2. Local tenderness is quite constant.
3. Shifting dullness in the flanks is a constant sign.
4. Abdominal distension usually commences three or four hours after injury.
5. Kehr's sign, referred pain in left shoulder, is frequently very prominent.

The mortality in the group with prompt operation (within twenty-four hours) is very low recently. From 1894 to 1914 there were 11 cases with only 3 recoveries, while from 1914 to 1925 there were 12 cases and 11 recoveries. The third group contains six cases where severe hemorrhage is delayed, due probably to one of three reasons: first, great omentum walls off the peritoneum at site of rupture; second, a bloody coagulum temporarily conceals the rent; and, third, a sub-capsular hematoma forms which later ruptures. In these cases the pedicle is very friable and frequently slips so that it is wise to use a series of small ligatures on the pedicle rather than a mass ligature. The mortality in this group was 50 per cent.

Spontaneous recovery is probably so rare that all ruptured spleens should be considered surgical. The operation always performed now is splenectomy. The

author recommends the supraumbilical midline incision as having some advantages over the left paramedian incision usually employed. Transfusion is recommended as the ideal procedure immediately postoperative. The blood in the peritoneal cavity may be citrated and used for transfusion.

Early complications are: (1) Peritoneal effusion probably due to injury to pancreas, (2) burst abdomen requiring resuturing, also due to pancreatic digestion of suture material, (3) left traumatic pleural effusion, (4) hiccoughs and (5) splenic asthenia.

Late complications are: (1) Attacks of palpitation when lying on left side occur occasionally, gradually wear off, (2) fleeting bone pains due to change in bone marrow occur frequently, (3) attacks of vomiting during first six months. There is no evidence to support the contention that splenectomized individuals are more susceptible to infections than other individuals.

P. G. FLOTHOW, M.D.

**DIVERTICULUM OF THE URINARY BLADDER:** Winfield S. Pugh (Surg., Gynec. and Obst., 1927, XLV, pp. 629-636). Morgagni was the first to place diverticula on an anatomicopathological basis and to designate them diverticula. The very early writers designated them as supernumerary bladders.

True diverticula are covered by all the layers of the bladder; false diverticula are limited to the mucous membrane and are the more common of the two. The author believes that diverticula occur in from five to seven per cent of cases. They may be found at any age, but the greatest incidence is from 40 to 60 years.

Seventy to eighty per cent are located near the ureteral openings, although they may occur in any part of the bladder except the trigone.

The symptoms are not characteristic; the double voiding is the nearest to a typical symptom. Associated diverticulitis and peridiverticulitis are often responsible for the production of other symptoms. Bleeding is due to trauma, stone, tumor or tuberculosis and is not caused by the sac proper.

The diagnosis can usually be made by means of a careful cystoscopic examination and by cystography.

Treated surgically, the outlook is good. The prognosis of the non-retention type is better than that of the retention. When the diverticula become numerous, the possibilities of a cure are remote, although alleviation may be obtained. Medicinal treatment is of little value.

In many cases preliminary treatment similar to that for prostatectomy must be carried out. The principal methods of radical treatment at present are the intravesical removal of Young and the combined intravesical and extravesical technic of Lower. Since many of these cases present a definite urinary obstruction, this feature must receive appropriate treatment before the diverticulum is considered. Illustrative case histories are cited.

HAROLD E. SIMON, M.D.

## GYNECOLOGY AND OBSTETRICS

## SUPERVISORS:

ARCHIBALD L. McDONALD,  
LYCEUM BLDG., DULUTH

L. W. BARRY,  
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**STERILITY OF UTERINE ORIGIN:** Presented to the Congress of Gynecologists and Obstetricians of The French Language, September, 1927. Fernand Chatillon (Gynec. et Obstet., August, 1927). Referring to a similar report in 1911, he notes little positive advance in spite of many investigations and new ideas of treatment. The relative importance of this factor is difficult to determine. Certain uterine conditions may be relatively incompatible with impregnation or continuation of pregnancy. In a few instances suitable therapeutic procedures increase the possibility of pregnancy. These are comparatively rare and the prognosis in a given case must always be a guarded one. Uterine hypoplasia may be: (1) Fetal, arrested development in fetal life; (2) infantile, arrested development first few years; and (3) pubescent, arrest before puberty. The hypoplasia involves the body as compared to the cervix.

Fetal and Infantile.....	{ Body 1 Cervix 2
Pubescent.....	{ Body 1 Cervix 1
Adult.....	{ Body 2 Cervix 1

The hypoplasia also involves other structures which may be factors in the sterility. Hystero-radiography aids in the diagnosis. Treatment is of most value when begun early in life. Aside from glandular therapy mention is made of stimulating doses of  $x$ -ray to the ovary. The long narrow cervix may call for local treatment.

Stenosis of the cervix has been much exaggerated in importance and many doubt its significance except in connection with hypoplasia. Many forms of treatment are discussed. The author prefers slow dilatation with laminaria tents, retained for from 12 to 24 hours, and repeated in a few months if pregnancy does not ensue. Hegar's bougies give less permanent results. Several types of intra-uterine stem pessaries are discussed and are recommended under suitable supervision. Of the many plastic operations he prefers the Pozzi type with no interference with the internal os.

Though all forms of uterine displacement have been considered as causing sterility, none are incompatible unless complicated with pathology, usually inflammatory, of the endometrium or adnexa. Ante-flexion is usually associated with hypoplasia of the infantile type with the long narrow cervix to which treatment should be directed. Retroflexion of the uterus at least

decreases the possibility of pregnancy often because of complications or secondary effects. It should be corrected in sterile women. The round ligament operations are preferred. Uncomplicated prolapse is rarely a cause of sterility.

From 10 to 34 per cent of women with fibroids are sterile. Do fibroids cause sterility, or does sterility predispose to fibroids? In many cases there are secondary changes in the endometrium or adnexa. Radiography is of great value in the diagnosis and is safe. Myomectomy is the treatment of choice except for cases with a large number of tumors. There are many reports of full term pregnancy following myomectomy. X-ray treatment may increase the chances of successful pregnancy through controlling bleeding; but, if it is sufficient to reduce the size of fibroids, results in changes in the ovary with temporary amenorrhea and sterility. The same statements apply to results from radium.

Uterine trophy from infection, endocrine disturbance, or hyperinvolution, may respond to glandular therapy or stimulating doses of  $x$ -rays to the ovary. Pseudo-endometritis represents a non-inflammatory hyperplasia, or hypertrophy of the endometrium associated with changes in the ovary, and characterized by menorrhagia, sterility, or abortion. Diagnostic curettage is often indicated and may be curative. Stimulating doses of  $x$ -ray to the ovary often help. X-ray therapy to the spleen in order to influence the coagulation time is suggested in bleeding cases. Radium locally in small doses is used in suitable cases but the exact dosage is still indefinite. Endometritis rarely persists above the internal os, and in this connection, gonorrhreal endocervicitis is most important. The author has little enthusiasm for local applications, silver nitrate, iodine, formaline, etc. He admits some success with diathermy and radium. He reports excellent results with the caustic paste of Filhos (potash, 2; chalk, 1 part). He also favors resection of the cervical mucosa as described by Faure and Douay in France, and by Sturmdorf.

Uterine tuberculosis is usually associated with other localizations of the disease and the sterility is not improved by treatment.

**Conclusions:** Before treating the uterus for sterility, the husband should be examined for sterility and for evidence of gonorrhoea. One should make insufflation and hystero-graphic studies of the tubes. In many cases the uterine factor in sterility is associated with general conditions or has caused secondary changes in the adnexa. The most common causes of sterility are localized in the cervix. In a considerable number of selected cases suitable treatment is followed by satisfactory results.

ARCHIBALD L. McDONALD, M.D.

**STERILITY OF TUBAL ORIGIN:** Report to the French Congress of Obstetricians and Gynecologists. Eugene Douay (Gynecology et Obstetrique, August, 1927). Tubal insufflation and hystero-radiography have

given new ideas concerning tubal permeability and physiology. Normally there is regular peristaltic motion, active motility of the peripheral two-thirds of the tube, and a spasm, which may be relieved by anti-spasmodics, such as benzyl-benzoate. Preceding menstruation there is impermeability of tubes.

Impermeability is rarely congenital except in extensive anomalies. Pathologic obstruction may be due to (1) extrinsic tumors of the broad ligament or inflammatory adhesions, or (2) intrinsic stenosis usually inflammatory. Stenosis of the ampulla may be due to agglutination of the fimbria or dense adhesions with hydrosalpynx. The isthmus and intra-uterine portions are involved in bilateral nodular salpingitis with sterility. Tubal obstruction is the cause of more than 50% of sterility. Exact diagnosis is only possible by insufflation and hystero-radiography.

Various types of apparatus for insufflation are described in detail. In any method, one must avoid error by escape of air or gas at the cervix. The pressure is to be measured by a manometer, and not to exceed 200 mm. The procedure should be stopped in case of pain. A proper period after menstruation should be chosen, as premenstrual congestion or spasm may suggest impermeability. Infection from instrumentation and rupture of tube have occurred. Nitrous oxide offers some advantage as it is rapidly absorbed.

The signs of permeability are as follows: 1. Sudden fall in pressure from 150 to 60 mm. 2. Auscultation over the hypogastrium, often confusing. 3. Fluoroscopic evidence of pneumoperitoneum and decrease in liver dullness, requires from 60 to 150 mm. of gas. 4. Scapular pain, which is usually transitory and moderate, but is diagnostic.

Diagnostically, the insufflation method showed the following results: 1. In 42% of a large series, there was evidence that at least one tube was permeable. 2. There was partial permeability in 16% as evidenced by slow passage of gas. This indicated impairment of the physiologic permeability which may be improved by local treatment. 3. There was impermeability in 24% of the series, with no abnormal findings. 4. In 18% of the series the author succeeded in producing permeable tubes by the tests, subsequent pregnancies being reported in numerous cases.

X-ray diagnosis with the intra-uterine injection of opaque media is reviewed, and the author commends lipiodol, a 40% iodized vegetable oil. This oil is opaque to the x-ray even in minute amount, penetrates the smallest opening, is innocuous to the tissues, is slowly absorbed and is non-toxic, does not mix in the body secretions, and is antiseptic. It does not interfere with subsequent pregnancy. The apparatus used includes an occlusive cervical sound, a syringe, and a manometer to measure the pressure, which should not exceed 250 mm.

The treatment, depending upon the hystero-radiography, is done by one of the following elective operations. 1. Salpingolysis, division of constricting adhesions or removal of tumors. Insufflation during operation is a valuable check. The free end is best left mobile. 2. Salpingostomy will be necessary if the am-

pulla is closed. In such cases it may be necessary to fix the ovary in proximity to the opening. 3. Tubo-uterine implantation is done when the intra-mural portion of the tube is excised. The end of the tube is drawn through into the uterus and the opening closed. Provided the remainder of the tube is patent, results are satisfactory and subsequent pregnancy has been reported. 4. Ovaro-uterine implantation may be done with free grafts or with the intact ovarian pedicle into the cavity of the uterus. Ovarian function is maintained and pregnancy has been reported.

It is exceptional to operate primarily to relieve sterility, but in well selected cases, accurate work is possible and results are promising.

ARCHIBALD L. McDONALD, M.D.

## ROENTGENOLOGY

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MUST LOCAL OR GENERAL HARM BE FEARED BY USING IODIPIN (LIPIODOL) AS OPAQUE MEANS IN HYSTEROSALPINGOGRAPHY? Zimmerman and Nahmmacher (*Fortschritte a. d. Geb. d. Roentgenstrahlen*, Vol. XXXVI, p. 572, Sept., 1927). The fear has been expressed that the injection of suspensions of iodine in oil into the uterus and fallopian tubes might have some injurious effect. Clinical experience has indicated that the method is harmless. The authors conducted a series of experiments in which iodipin was injected into the peritoneal cavity of guinea pigs and rabbits without the slightest disturbance. Absorption, as demonstrated by roentgenograms, occurred very rapidly, as much as two cubic cm. being absorbed in four days. In fact, much smaller quantities than this usually reach the abdominal cavity in actual practice. The possibility of idiosyncrasy to iodides must be considered and in its presence bromine should be substituted.

L. G. RIGLER, M.D.

AN INVESTIGATION INTO THE DEFECTS IN THE PYLORIC PART OF THE STOMACH: L. Arisz (*Acta Radiologica* Vol. VIII, p. 274, Oct. 1927). Roentgenologists are frequently puzzled by the presence of small defects in the pyloric third of the stomach, usually from one to two cm. proximal to the pylorus and most commonly on the lesser curvature. Occasionally they occur on the greater curvature. The author describes a number of cases of this type which were explored surgically and nothing found in the stomach of pathological significance. Many were associated with duodenal ulcers and ulcers higher up on the lesser curvature. If peristalsis passes through these areas without hindrance, if a distinct antrum is

formed, if no niche is visible, and there is no circular spasm of the stomach, the author believes these defects are due to folds of mucous membrane (Forssell). Benign tumors must be ruled out as peristalsis will pass through these without hindrance, but they tend to produce a larger, more central defect. Malignant tumors almost always produce a much larger defect and tend to change the peristalsis. Ulcers in this region produce changes in peristalsis, circular spasm, occasionally a niche, and shortening of the lesser curvature.

LEO G. RIGLER, M.D.

## EYE, EAR, NOSE AND THROAT

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FIDELITY BLDG., DULUTH

MALIGNANCY OF THE LARYNX AND ESOPHAGUS TREATED BY RADIUM EMANATION: Frank Richard Herriman (Laryngoscope, 37: 664, September, 1927). When radium was first applied to malignancy of the larynx and esophagus, the methods were so crude and the results in practically all cases so unsatisfactory, that it was very soon abandoned. Malignant lesions in these structures are so inaccessible and the tissues of which they are composed so quickly rendered radiosensitive that radium has now few advocates as a treatment for disease there located. In the author's clinic the use of radium has been discontinued for several years when he revived the therapy, using a new technic, however—the implantation of radium emanation in screened "seeds" directly into the affected tissues.

For laryngeal growths the technic consisted in exposure of the malignant area by direct laryngoscopy or the suspension method—the latter being preferable. For growths situated in the esophagus, a standard esophagoscope was brought into service. When adequate exposure had been obtained, the dimensions of the growth were carefully estimated, and the entire area of malignancy implanted at regularly spaced intervals with the removable platinum radon seeds designed by Joseph Muir of New York. The employment of suspension laryngoscopy makes the placing of radium in the larynx a comparatively simple matter, and with the esophagoscope and the aid of the fluoroscopic screen, it can be put in the esophagus with equal facility. The opponents of radium in the treatment of such malignancies have continued to cite the severe reactions and distressing sequelæ which follow the use of the crude applicators first employed for work in these peculiarly sensitive structures. When the implantation technic was first instituted in the larynx bare tubes were employed, and the necrosis produced by these unscreened containers caused sloughing of the irradiated tissues, and, frequently, grave injury to the

adjacent healthy cartilage. In the esophagus the caustic rays were even more dangerous, for sloughing meant lung perforation with almost certainly fatal results.

The design of the seeds used by the author obviated practically all the difficulties encountered under the old methods. Implantation is by far the most accurate way of assuring even and adequate radiation throughout the neoplasm, and as soon as it became possible to implant a *screened* container, doing away with all danger of necrosis, the radioactive centers could be so placed that every section of the growth would be reached by the therapeutic rays, while all caustic action was eliminated. One of the most important features of these seeds is that they are removable, as this does away with the difficulties involved in permitting foreign bodies to remain in the tissues of the upper alimentary canal.

Details of eight cases selected from a larger series are given. All the patients were "hopeless" so far as surgery was concerned, at the time the implantations were undertaken. When this report was made at the New York Academy of Medicine, December 22, 1926, the patients were all alive, although the period which had elapsed since the treatment was begun was insufficient to permit the drawing of any conclusions as to the permanent relief which could be afforded.

The author feels that even if no more than temporary palliation has been secured, this, in itself, is well worth the effort required to apply the treatment, inasmuch as every patient had been doomed to die within a few weeks, when they first came under his care. Most of them had been able to return to their regular occupations, and even those who were still obliged to wear tracheotomy tubes were comfortable and pursuing their ordinary mode of life.

FOREIGN BODY IMPACTED IN LOWER AIR AND FOOD PASSAGES: Millard F. Arbuckle (Jour. Missouri State Med. Assn., Oct., 1927). The report of 51 cases is made in tabulated form. Three cases of outstanding interest are presented in detail.

The first case was that of a male, aged 34, who for 17 months had been troubled with dyspnea, productive cough, fever and loss of weight. Many physicians had seen him and had treated him for tuberculosis, lung abscess, chronic bronchitis, etc. He gave a history of a sharp attack of choking and coughing just before his symptoms started, while eating pork hash.

X-ray pictures showed a shadow at the right base. At bronchoscopy there were found numerous large granulations, much pus, and finally a foreign body. On removal, this latter was found to be part of the body of a vertebra which is attached to a pork chop.

A second case concerned a male aged 26, who gave a history that while having some dental work done, the dentist had accidentally dropped a broach (used in extracting nerves from root canals) in his mouth. It is important to note that there was no coughing nor other sensation of lung irritation at the time. X-ray examination showed the broach in the right main bronchus and its removal was followed by uneventful recovery.

A third case, a baby of 22 months, had dyspnea, cyanosis and fever. Twenty-four hours previously, while

eating a hickory nut, she had an attack of choking and had been wheezing since then. *X*-ray examination showed involvement of the right upper lung. At bronchoscopy three pieces of hickory nut were removed from the right main bronchus, which was lined with a deep red mucosa and was full of mucopurulent secretions. There was temporary improvement, but the next morning tracheotomy had to be done for dyspnea and cyanosis. Twenty-four hours later she died and at autopsy there were found a number of small pieces of nut in the secondary bronchus of the right lower lobe far out in the lung. There was also pneumonia.

The author concluded, among other things, that a careful physical *x*-ray and bronchoscopic examination is indispensable in all cases of unexplained cough, particularly those with a suggestive history.

VIRGIL J. SCHWARTZ, M.D.

## BOOK REVIEWS

Books listed here become the property of the Ramsey and Hennepin County Medical libraries when reviewed. Members, however, are urged to write reviews of any or every recent book which may be of interest to physicians.

**PHYSICAL DIAGNOSIS.** Richard C. Cabot, M.D., Prof. of Medicine, Harvard University. 9th Edition. 536 pages. Illus. Cloth, \$5.00. New York: Wm. Wood Co., 1927.

This valuable and well known book on physical diagnosis has been thoroughly revised and enlarged. The volume presents diagnostic methods and processes of equal value to the student and practitioner.

Dr. Cabot in his preface states that he has made no attempt to describe technical processes with which he has no personal familiarity and gives no space to the description of tests which he believes to be useless. By some this may be looked upon as a shortcoming, but one must admire Dr. Cabot's frankness and sincerity. At least one gets his ideas of the factors he considers important in diagnostic work. Dr. Cabot also very opportunely draws special attention to the false distinction between clinical diagnosis and laboratory diagnosis.

The subject matter in this book is brief and to the point and one is not obliged to wade through pages of mere words to glean the essential facts he seeks.

The chapters on cardiovascular disease have been amplified. Electrocardiography and sphygmography are only briefly described as Dr. Cabot feels that neither method is likely ever to be used by the practitioner for whom the book is primarily intended. The text on the normal and pathological variations of the heart sounds is marked with reference numbers which correspond to the Gamble-Cabot Cardiac Diagnostic records, a set of phonographic records taken with the collaboration of the Western Electric Company and the Columbia Phonograph Company. These records will be marketed this year and will be a boon to all teach-

ers of internal medicine and should be equally invaluable to the practitioner as well.

The chapters on clinical microscopy and urine analysis are brief but pointed.

The chapters on tuberculosis and blood have been rewritten.

The illustrations are profuse and there is an excellent index.

All in all the book is a delight to read and one can easily understand why it is so popular with both student and practitioner.

To those who have had the privilege of working with Dr. Cabot the book is doubly delightful, for his personality greets them at every turn.

HARRY OERTING, M.D.

**CERTAIN SAMARITANS.** Esther Pohl Lovejoy. 302 pages. \$3.50. New York: The MacMillan Company, 1927.

This is the thrilling story of the accomplishments of the American Women's Hospitals, an organization manned, supported and executed entirely by women physicians. It was established in 1917 as a result of the discrimination during the World War by the American Government against women physicians, for they decided that, although not called to the colors, they would go anyway. Well known and experienced medical women donated their services, collected funds and founded this organization, which is now well known and which has meant so much to foreign people who have been innocent sufferers for the policies of their respective governments. The American Women's Hospital No. 1 was opened in France in 1918 in buildings furnished by the French Government with the understanding that it be available for both civil and military cases. This was manned and financed entirely by women and was moved about from place to place wherever the need was great. As soon as possible other hospitals and dispensaries were opened and the great work was established. Before the armistice was signed it was carried into the Balkans in coöperation with the Red Cross, in a hospital in a Turkish school house. One of the numerous patients was a Serbian pope of the Orthodox Church, who suffered from appendicitis for many days before he would allow a woman to operate upon him but who, when much to his surprise he recovered, was a very grateful patient.

As time went on the work became more varied and included the establishment of hospitals, dispensaries and training schools for native nurses, classes in infant welfare work and district nursing in coöperation with native physicians, sanitation work and constant warfare on the many insects of the country. The Serbian government coöperated in every possible way, even furnishing a pope for the consolation of the patients, and a cemetery for the burial of the dead. Armenian and Syrian relief work was organized under the Near East Relief Committee in 1919. The governments furnished the buildings, the Near East Relief Committee the repair service, equipment and supplies, while the American Hospitals provided the personnel, paying the

salaries of all persons, native or American, who were connected with the health work.

In 1922 the burning of Smyrna and the forced exodus of all Christians from Turkey created another emergency to which the American Women's Hospitals promptly responded, their director arriving while the flames were still rising from the city. At this time 300,000 people were driven from the city to the quay where they were forced to wait for days while Greece decided to send boats for them and the other countries maintained strict neutrality. Finally, as there seemed to be no end to refugees, and disease and pestilence became so severe among them, Greece, in self protection, was forced to close her ports to them, and many shiploads of disease-ridden, starving people had no place to land. With the help of the Red Cross and the Near East Relief Committees the American Women's Hospitals established quarantine stations for them on the bare, rocky islands off the coast of Greece, under the direction of Dr. Olga Stasney. This accomplishment marked the climax of the work, as well as of the book, and is admirably told, furnishing vivid pictures of dire poverty and suffering, both mental and physical, which would otherwise be impossible to visualize. Following this the American Women's Hospitals conducted relief work in Russia and Turkey and will continue to function wherever the need is great.

This book will be of interest to physicians, to those who watch with interest the accomplishments of women and those who are interested in carrying charity to suffering humanity at the far ends of the world. It should be widely read and many readers will be glad to know that the purchase price of every copy goes to help carry on the work of the organization.

Whether or not one approves of the American Women's Hospitals, the National Medical Women's Association, or of women physicians in general, one must admire and appreciate the courage, fortitude, efficiency and humanity of these women who, in the words of the author, "have lived abundantly and stored up riches within themselves upon which they may draw as the years go by. They can never be poor although they die in the almshouse—the place would be enriched by them."

MARGARET WARWICK, M.D.

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**DISORDERS OF THE NOSE, THROAT AND EAR.** Aaron Roth, M.D., F.A.C.S. 238 pages. Illus. Cloth, \$2.50. Brooklyn: Physicians and Surgeons Book Co., 1927.

This small volume, written in very simple language, will be of interest to any interne, nurse or layman for collateral reading. It is in no sense a text book and might have more illustrations with profit. The last chapters on the problems, management and prevention of deafness are particularly interesting. By a mistake of printers the first sixteen pages of text have been omitted.

The book provides an evening's entertainment.

K. C. WOLD, M.D.

#### MANUAL OF THE DISEASES OF THE EYE.

Charles H. May, M.D. 12th edition revised. Illus. 445 pages. Cloth, \$4.00. New York: Wm. Wood and Co., 1927.

In presenting a book of this kind which, as the author states, is only for the student and general practitioner the question will always arise, What should be included in such a text and what should be omitted?

The beautifully colored plates as well as the numerous illustrations certainly fulfill the object of being a manual of eye diseases for general use. One wonders, however, if such a book might not tend to make a man treat certain conditions of the eye in which he is not by experience or knowledge qualified.

As a student, the reviewer remembers that May's was always considered the best student text book on the market.

A description of the rarer diseases as well as minute technic of certain operations might have been omitted without harming the general usefulness of the book. Colored Plate No. 2 is rather too diagrammatic and the different stages of cataract might be substituted with benefit.

In a résumé of therapeutic agents the most noticeable omissions are (1) merucrochrome, (2) foreign protein therapy, (3) ultra violet radiation and diathermy.

Everything considered, it is a wonderfully compact, well written and well illustrated book which should be in the hands of every student and general practitioner.

K. C. WOLD, M.D.

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#### DIATHERMY WITH SPECIAL REFERENCE TO

**PNEUMONIA.** Harry Eaton Stewart, M.D., Formerly Attending Specialist in Physiotherapy, U. S. Marine Hospital, New York; Author of "Physiotherapy, Theory and Clinical Application," and "Physical Reconstruction and Orthopedics." 12 mo., cloth; 220 pages, 45 illustrations, 15 charts. Price, \$3.00 net. Paul B. Hoeber, Inc., New York City, 1926.

Stewart's Diathermy and its Application to Pneumonia is another work from an excellent man in the field of physiotherapy.

The book, consisting of 204 pages, has a rather misleading title in one respect, inasmuch as more than half of it is devoted to a discussion of apparatus and diathermy technic. There is also a chapter on surgical diathermy which seems out of place in a work of this title. All of this material can be found in the general text books on the subject, one of which is Stewart's Physiotherapy and Principles of Application.

The last 84 pages of the book are a well presented group of detailed case histories in different types of pneumonia, treated by diathermy, as well as a presentation of controls.

The symptomatic improvement of the treated cases and the lower mortality rate, 19.4% compared to 42.9% in the controls, is impressive. However, the relatively small group treated causes one to be cautious in appraising the final conclusions.

WM. P. SADLER, M.D.

**TIGER TRAILS IN SOUTHERN ASIA.** Richard L. Sutton, M.D., Sc.D., LL.D., F.R.S. 115 Illustrations. Pages 207. Price \$2.25. St. Louis: C. V. Mosby Co., 1926.

Dr. Sutton's *Tiger Trails of Southern Asia* is not all tigers. Nothing in jungle life is left out of his story. He tells of things that crawl and those that fly, he describes game animals from the small mouse deer to the elephant. He gives an interesting and instructive description of the native tribes of Indo-China and India, their character, religion and habits.

One is told how to equip for a big game hunt, how to get to the hunting grounds and how to do the job when the hunt is on, and further, which seems quite important, he gives advice as to the way of getting on with the natives.

The adventures, modestly told, are full of interest and thrills. They are apt to stimulate a desire in the young to do some of the things the author has done and perhaps leave the old with the thought that they have missed something very much worth while.

The many pictures in the volume help tell the story and the vein of humor running through is refreshing. The book may be read with both pleasure and profit.

H. C. JOHNSON, M.D.

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**NASAL NEUROLOGY, HEADACHES AND EYE DISORDERS.** Greenfield Sluder, M.D., F.A.C.S., Clinical Professor and Director of the Department of Oto-Laryngology, Washington University School of Medicine, St. Louis. 428 pages. Illus. Price \$11.50. St. Louis: C. V. Mosby Company, 1927.

This monograph represents the author's conclusions and observations since the publication of his first book in 1928 on Headaches and Eye Disorders of Nasal Origin. In the main, Sluder maintains his original beliefs. That vacuum headaches are always due to the anatomical structure of the frontal sinus, he doubts, basing his conclusion on the study of 580 cases. His descriptions of nasal neuralgia and hyperplastic sphenoiditis are classical.

He also includes in this book a description of his ethmoid and sphenoid operations. This is a well known procedure but not one followed by the majority of rhinologists in this section of the country. A new operation on the antrum is also included.

This book should be read by all rhinologists, not alone for its educational value but for the stimulation to do scientific work.

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